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CONTENTS AND SUBJECT INDEX

Statistics on Deaths from Rheumatic Heart Disease. Halbert L. Dunn, M.D., Washington, D. C., and O. F. Hedley, M.D., Philadelphia...1413

Postoperative Coronary Artery Occlusion. Arthur M. Master, M.D.; Simon Dack, M.D., and H. L. Jaffe, M.D., New York.1415

Basal Anesthesia. Alfred E. Jones, M.D., Chicago.....1419

Emergency Treatment in Asthma. G. L. Waldbott, M.D., Detroit.1423

The Lop Ear. Donald W. MacCollum, M.D., Boston.....1427

Obesity in the Adolescent Cured Without Injections. Horace Gray, M.D., San Francisco.....1430

The Action of Hypoglycemia on the Central Nervous System and the Problem of Schizophrenia from the Physiologic Point of View. Ernst Gellhorn, M.D., Chicago.....1433

Trichinosis Epidemic. Thomas L. Forenbaugh, M.D., Fort Ethan Allen, Vt.; Leo Segal, M.D., Burlington, Vt., and H. A. Schulze, M.D., Waterbury, Vt.....1434

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Minute Perforation of an Arteriosclerotic Plaque with Resultant Retroperitoneal Hematoma. V. Eugene Frazier, M.D., Kansas City, Mo.....1437

Subcutaneous Rupture of the Jejunum Sustained in a Game of Football. W. H. Ulrich, M.D.; J. E. Webster, M.D., and C. Fremont Vale, M.D., Detroit.....1438

Combined Extra-Uterine and Intra-Uterine Pregnancy. E. J. Dolan, M.D., New York.....1438

Heat Sensitiveness. Edward W. Miskall, M.D., East Liverpool, Ohio 1439

Strychnine Poisoning. R. E. Priest, M.D., Worthington, Minn.....1440

Ear Phenomenon. George B. Hassin, M.D., Chicago.....1440

SPECIAL ARTICLE

Less Well Known Vitamins. C. M. McCay, Ph.D., Ithaca, N. Y...1441

COUNCIL ON FOODS 1446

OFFICIAL REPORTS AND RESOLUTIONS

Reports of Officers of the American Medical Association.....1447

EDITORIALS

The Bleeding Peptic Ulcer.....1491

Food and Drug Bill Condemned.1492

The Study of Disease Among British Post Office Employees.....1492

CURRENT COMMENT

Bile Salts and Arthritis.....1493

The Proposed Federal Sanction of Osteopathy 1494

BUREAU OF LEGAL MEDICINE AND LEGISLATION 1517

(Subject Index on next page)

ORGANIZATION SECTION Facing page 1530

Health Insurance in England..197B

Graduate Medical Education: X. Missouri.....200B

Official Notes.....201B

Medical Legislation.....201B

Woman's Auxiliary.....202B

A.M.A. SESSION—San Francisco—JUNE 13-17, 1938

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SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab." abstract; "E." Editorial; "C." Correspondence; "MI." Medicolegal; "ME." Medical Economics.

A. M. A., Reports of Officers.....1447
Advisory Committee on Advertising of Cosmetics and Soaps report.....1460
Auditor's report.....1486
Board of Trustees report.....1448
books published by.....1453
building.....1449
Bureau of Exhibits report.....1476
Bureau of Health and Public Instruction proposed change in name.....1453
Bureau of Health and Public Instruction report.....1467
Bureau of Investigation report.....1476
Bureau of Legal Medicine and Legislation report.....1460
Bureau of Medical Economics report....1470
business operations.....1449; 1487
Chemical Laboratory report.....1458
Committee on Scientific Research report..1481
Committee on Therapeutic Research report.1484
Committee to Determine Value of X-Ray Film with Paper Base.....1479
Committee to Study Air Conditioning report.....1479
Committee to Study Contraceptive Practices report.....1479
Conference on Publicity for Scientific Medicine.....1453
constituent state societies.....1447; (constitution) 1488
constitution, proposed amendments.....1448
cooperation with lay organizations.....1468
Cooperative Medical Advertising Bureau report.....1452
Council on Foods report.....1457
Council on Industrial Health report.....1459
Council on Medical Education and Hospitals report.....1489
Council on Pharmacy and Chemistry report.....1453
Council on Physical Therapy report.....1456
Council on Scientific Assembly report....1490
Division of Drugs, Foods and Physical Therapy report.....1453
employees, number.....1449
EPITOME.....1454
exhibits at expositions, etc.....1478
Fellows.....1447; 1449; 1450
financial report.....1449; 1487
GLANDULAR PHYSIOLOGY AND THERAPY.1454
Hygeia, report.....1452
INTERNS' MANUAL.....1454
JOURNAL, editorial policy; subscribers; operating expenses.....1449; 1450; 1487
journals (special) report.....1451
Judicial Council report.....1488
Library report.....1451
Mailing and Order Department report...1453
medical patents; conference of holders..1453
membership.....1447
motion picture on syphilis, report..1453; 1478
NEW AND NONOFFICIAL REMEDIES.....1454
organization (better).....1447
Organization Section of JOURNAL.....1449
package library service report.....1452
President-Elect, successor in case of death or disability, resolution on.....1448
QUARTERLY CUMULATIVE INDEX MEDICUS report.....1451
radio program.....1467
resolution on death of Dr. Simmons.....1448; 1455
retirement fund established.....1453
Scientific Exhibit at Atlantic City.....1477
Secretary report.....1447
STANDARD CLASSIFIED NOMENCLATURE OF DISEASE report.....1452; 1490
survey of need for medical service.....1470
Treasurer's report.....1486
USEFUL DRUGS.....1454
work of.....1448
Abdomen, acute, and mesenteric lymphadenitis.....ab-1519
retroperitoneal hematoma.....*1437
Acid, mandelic, behavior.....1502
Adolescence, obesity in, cured.....*1430
Age, determining, by teeth eruption and bone ossification.....1510
Alcoholism, strychnine treatment.....1512
Amytal, sodium, in strychnine poisoning..*1440
Anemia, hypochromic, liver therapy....ab-1530
pernicious, eosinophilia from liver diet.ab-1528
Anesthesia, basal; evipal soluble by rectum.*1419
explosions in operating rooms.....1500
Aniline, acute poisoning from ingesting..ab-1527
Army, U. S., Medical Corps, examination..1499
Arteries, coronary, postoperative occlusion.*1415
Arteriosclerosis plaque, minute perforation.*1437
Arthritis and bile salts.....E-1493
Asthma, calcium therapy.....C-1407
crisis, emergency treatment.....*1423
Benzedrine sulfate—a warning.....C-1507
Benzene poisoning.....1508; ab-1520
Bile salts and arthritis.....E-1493
Bile Ducts-gastrointestinal anastomoses..ab-1530
calculi, remaining (correction).....1499
Blennorrhea, inclusion.....ab-1523
Blood sedimentation and plasma fibrinogen.....ab-1526
sodium chloride in (postoperative)....ab-1528
sugar, extreme hyperglycemia.....1511
sugar (low), action on central nervous system.....*1433
Board Examinations.....1513
Book Notices.....1513
Books Received.....Adv. page 30
Boyd, William, gave Potter Lecture.....1497
Brain tumors, intracerebral; extracerebral.....ab-1521
tumors, water balance in.....ab-1520
Bureau of Legal Medicine and Legislation.1517
California Medical Association.....1494
Cancer, thrombosis of peripheral veins sign of.....1499
Coitus, how soon allowed after labor?.....1512
Colds, vaccinate post office employees....E-1493
Congress of American Physicians and Surgeons.....1498
Cornell University alumni day.....1496
Correspondence.....1507
Council on Foods.....1446
Deaths.....1504
Dementia Paralytica at Innsbruck Clinic..ab-1527
Dementia Praecox, circulation time in...ab-1520
electrocardiogram in insulin and metrazol shock.....ab-1529
physiologic viewpoint.....*1433
treatment, malarial blood from dementia paralytica.....1512
Diabetes Mellitus in children, diet for...ab-1523
Drugs, federal bill condemned.....E-1492
Ear, lop, plastic surgery for.....*1427
phenomenon in sympathetic nerve lesion.*1440
Electric current (60,000 volt) effect on body.....1511
Elements in human body.....1511
Ely Sign in low back disease.....1510
Empyema cavities, healing.....ab-1525
Epilepsy and hypochondriasis.....ab-1527
operations in.....1508
Food, federal bill condemned.....E-1492
Foreign Letters.....1499
Gallbladder inflammation, agranulocytosis in.1501
Gizzard erosion factor.....*1444
Goiter, juvenile, basal metabolism in.....1501
Goldthwaite Sign in low back disease.....1510
Gonorrhea, treatment, acriflavine.....1512
treatment, sulfanilamide.....1501
Government Services.....1499
Guggenheim fellowships awarded.....1498
Hammarsten, Einar, lecture by.....1496
Heart diseases, regrouping for International List of Causes of Death.....*1414
electrocardiograms, anomalous forms..ab-1525
insufficiency, vitamin C in.....ab-1526
rheumatic disease, mortality statistics..*1413
Heat sensitiveness with dermatosis and pollen atopy.....*1439
Hematoma, retroperitoneal.....*1437
Herpes simplex in trombone player.....1509
Hospitals, Berlin, increasing mortality in...1501
psychiatric, former patients form society..1495
Intestine, small, roentgen study.....ab-1527
Jaundice, beneficial effect in arthritis....E-1493
Jejunum, subcutaneous rupture in football player.....*1438
Kansas Medical Society.....1495
Kidney, tuberculosis.....ab-1524
Korsakoff's Syndrome.....ab-1530
Langley-Sherrington Sign.....*1440
Lee, Alfred O., professor of medical history.1495
Leishmaniasis, dogs transmit.....ab-1526
Leprosy, treatment, Australia.....1503
Leukemia allied to tumors?.....ab-1521
from industrial poisons or war gas.....1508
Luckhardt Lecture.....1495
Lungs abscess, pneumothorax in.....ab-1529
compression, pneumoperitoneum for...ab-1521
Malpractice: vertebra; dislocation of; failure to reduce.....MI-1517
Mantoux Test, stabilizing tuberculin....ab-1522
Marriages.....1503
Maternal and child health conference, N. J..1496
Measles, placental extract prevention....ab-1528
Medical Examinations and Licensure.....1513
Medical Society of District of Columbia...1494
of State of New York.....1496
of State of North Carolina.....1496
Medicolegal Abstracts.....1517
Meetings, Coming Meetings.....1518
Melbourne University, Prof. Jones criticizes.1503
Migraine in children.....ab-1520
Milbank Fund, annual meeting.....1496
Moniliasis, bronchopulmonary.....ab-1523
Morris, A. B., poses as doctor.....1498
Neck injury and coccygeal pain.....1512
Neri Nodding Test.....1512
Nerves, new system of: "nocifensor".....1499
News.....1494
Newsweek, unauthorized salesman.....1498
Nitrogen balance, effect of diet on.....ab-1522
Nose septum operation and packing.....1512
Obesity in adolescent; cured.....*1430
Obstetrics, graduate course, Minn.....1496
Ohio State Medical Association.....1496
Osteomyelitis and hypovitaminosis.....ab-1529
Osteopathy, proposed federal sanction....E-1494
Pan American Sanitary Conference.....1498
Paratyphoid, complications.....1511
Patella, fracture, external purse string treatment.....C-1507
Pediatrics, graduate course, Minn.....1496
Pharmacy Week, Philadelphia.....1497
Penis, artificial.....1512
Peptic Ulcer, bleeding.....E-1491
Pessaries: vaginal; importation by physician lawful.....MI-1518
Pituitary irradiation, blood modified by..ab-1528
Plague infection, Adams Co., Wash.....1498
Poliomyelitis in Australia.....1503
Pollen atopy, heat sensitiveness with.....*1439
Post Office employees, disease in.....E-1492
Potter Lecture, Dr. Boyd gave.....1497
Pregnancy, acquired or congenital syphilis in.....1510
heterotopic, with living child.....*1438
polyneuritis of.....ab-1530
pruritus in.....1512
toxemias of, vs. water balance.....ab-1524
Psychiatric service to courts, committee on.1497
Queries and Minor Notes.....1508
Rabies in animals, diagnosis.....ab-1519
Radium workers, protection, England.....1500
Research, medical, Australia.....1503
Respiration, paroxysmal rapid.....1511
Robinson, William Duffield, memorial.....1497
Roentgen Ray workers, protection, England.1500
Scarlet Fever immunization with formalized toxin.....ab-1519
Sedatives, habituation; withdrawal.....1509
Sigerist, H. E., gave Luckhardt Lecture..1495
Simmons, George H., death.....1448; 1455
Skin disease, heat sensitiveness with.....*1439
Society Proceedings.....1518
South Dakota State Medical Association....1497
Spermatozoa, study of.....1502
Spleen irradiation modifies blood.....ab-1528
State Board Examinations.....1513
Sternum puncture, chemistry of blood and bone marrow obtained by.....ab-1527
Stevenson, C. V., watch for kidnaper.....1497
Stomach cancer, lymph node.....ab-1528
motor function, after resection.....ab-1530
Stomatitis, eggs-soy bean-yeast diet for..ab-1525
Strychnine, combining with whisky.....1512
poisoning, sodium amytal for.....*1440
Sulfanilamide, protest sale over counter....1501
treatment of gonorrhea.....1501
Teeth infection, short wave diagnosis...ab-1529
Tetanus antiserum, liver "atrophy" after..1501
Texas State Medical Association.....1498
Thrombosis, coronary, postoperative.....*1415
peripheral venous, sign of visceral cancer.1499
Tonics and Sedatives.....Adv. page 24
Trichinosis epidemic of 64 cases.....*1434
Tuberculosis in German schools.....1502
Indiana Association.....1495
mortality, Germany.....1502
pulmonary, autohemotherapy.....ab-1522
pulmonary, exogenous superinfection..ab-1528
pulmonary, in post office employees....E-1492
Tularemia in Germany.....1502
Tumors, leukemia allied to?.....ab-1521
Typhus in laboratory worker from virus isolated from rats.....ab-1526
U. S. Employees' Compensation Commission sanctions osteopathy.....E-1494
Upshur, F. W., venereal disease officer....1498
Vitamin C in heart failure.....ab-1526
H, I, K, P.....*1442; *1443; *1444
needs of insects and animals.....*1441
Water supplies, city softening.....1509
Workmen's Compensation Acts: dermatitis following abrasion.....MI-1517

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STATISTICS ON DEATHS FROM RHEUMATIC HEART DISEASE

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The Bureau of the Census publishes mortality statistics according to the titles of the International List of Causes of Death. This list has been accepted internationally for over forty years. It is modified at each decennial revision by means of an international conference, the next meeting of which will be in the fall of this year. This revision is necessary in order to realine the list with advances in the science of medicine.

Two distinctly different points of view are in conflict with each other in the revision of this list. From the standpoint of physicians on the frontier of modern medicine, the essential desire is to change the titles so as to produce statistics which meet the requirements introduced into the picture of death by the new and advanced knowledge of medicine. Each modification of the list made with the purpose of meeting the demand for change disturbs the comparability of the mortality statistics produced by the use of the list, so that it becomes increasingly difficult to study the significance of changes in the death rates for various conditions from one decade to another. On the other hand, the physician desiring change says "What use is it to maintain comparability if the titles are relatively meaningless in the light of the newer knowledge of medicine?"

An assumption commonly made by both the physician and the statistical analyst is that the problem of securing comparability in mortality statistics will be solved if satisfactory readjustments can be made in the International List of Causes of Death. While it is true that such adjustments are essential in order to modernize the list and to bring it into alinement with advances of medicine, other factors are also involved in the production of statistical comparability of the tabulations. Among these factors are such items as the changing habits of the physician in the diagnosis of disease, the increase in his knowledge and the new scientific tools at his disposal for diagnosis, and the methodology in the selection of the primary cause of death when several causes are noted on the certificate.

From the Office of Vital Statistics, Bureau of the Census, United States Department of Commerce, and the Office of Heart Disease Investigations, branch office of the National Institute of Health.

Students of heart disease have been at a disadvantage because of the lack of mortality statistics tabulated on the basis of what is now an accepted entity, rheumatic heart disease. The International List of Causes of Death classifies the various heart conditions on an anatomic basis, whereas it is now generally accepted that rheumatic conditions should be treated as a unit, since they have a common etiologic basis. It has become increasingly important that this particular group of heart diseases be studied as a class, since cardiac mortality as a whole has been increasing over the past two decades.

One of us, an officer of the United States Public Health Service assigned to the Office of Heart Disease Investigations, has been responsible for focusing the attention of physicians on the need for change in the tabulations of rheumatic heart conditions. His contributions were emphasized in an editorial in THE JOURNAL of Jan. 9, 1937.

At the present time the International List of Causes of Death classifies acute rheumatic fever separately as title 56. Other rheumatic heart conditions are included without separate notation under the titles pericarditis, chronic endocarditis, diseases of the myocardium and other diseases of the heart.

The Bureau of the Census has agreed to separate rheumatic conditions under each of these titles for the death certificates of 1937, 1938 and 1939. For these years heart conditions will be tabulated in two ways: as they have been listed in the past, so that comparability can be retained, and also, in accordance with the needs of the cardiologist, as separate rheumatic conditions. The accompanying table constitutes the office breakdown to be used by the Bureau of the Census in the tabulations for the years mentioned. The changes affecting rheumatic heart disease are listed in italics.

The proposed regrouping of deaths from heart conditions to be used by the Bureau of the Census in the tabulations of 1937, 1938 and 1939 is an office breakdown and does not constitute official changes in the International List of Causes of Death. However, the American Public Health Association committee on the accuracy of certified causes of death has incorporated a similar modification as a part of its recommendations to be made to the international commission for the revision of the International List of Causes of Death in Paris this fall. What can be achieved in effecting a permanent reclassification of the rheumatic conditions will not be known until the results of the meeting of the international commission are obtained.

There is little doubt that an entirely new picture will result from the separate tabulation of all rheumatic cardiac conditions. In preliminary studies conducted by the United States Public Health Service in Philadelphia, practicing physicians in that city were requested

to report deaths from rheumatic heart disease during 1936. The number reported was 357, which would indicate a death rate for Philadelphia of 17.6 per hundred thousand of population. In addition there were 195 deaths which might or might not have been due to a rheumatic condition; e. g., those due to subacute bacterial endocarditis, to endocarditis in persons under 30 years of age, to valvular disease of long duration in persons over 30, to mitral stenosis and to other conditions encountered less frequently.[1]

Regrouping of Heart Diseases for Mortality Statistics

INTERNATIONAL LIST OF CAUSES OF DEATH, FOURTH EDITION (Present classification of deaths from heart conditions)		REGROUPING OF DEATHS FROM HEART CONDITIONS TO BE USED IN TABULATIONS OF 1937-1939	
Title No.	Title Name	Title No.	Title Name
56.	Acute rheumatic fever	56.	Acute rheumatic fever
			A. *Acute rheumatic endocarditis*
			B. *Acute rheumatic myocarditis*
			C. *Acute rheumatic pericarditis*
			D. *Other acute rheumatic heart conditions under this title*
			E. All others under this title
90.	Pericarditis	90.	Pericarditis
			A. *Chronic rheumatic pericarditis*
			B. Others under this title
91.	Acute endocarditis	91.	Acute endocarditis
	A. Specified as acute		A. Specified as acute
	B. Unspecified (under the age of 45 years)		B. Unspecified (under the age of 45 years)
92.	Chronic endocarditis, valvular diseases	92.	Chronic endocarditis, valvular diseases
	A. Endocarditis specified as chronic and other valvular diseases		A. Endocarditis specified as chronic and other valvular diseases
	B. Endocarditis, unspecified (45 years and over)		B. Endocarditis, unspecified (45 years and over)
			C. *Chronic rheumatic valvular diseases including chronic rheumatic endocarditis*
93.	Diseases of the myocardium	93.	Diseases of the myocardium
	A. Acute myocarditis		A. Acute myocarditis
	B. Myocarditis, unspecified (under the age of 45 years)		B. Myocarditis, unspecified (under the age of 45 years)
	C. Chronic myocarditis and myocardial degeneration		C. Chronic myocarditis and myocardial degeneration
	D. Unspecified		D. Unspecified
			E. *Chronic rheumatic myocarditis*
94.	Diseases of the coronary arteries and angina pectoris	94.	Diseases of the coronary arteries and angina pectoris
	A. Angina pectoris		A. Angina pectoris
	B. Diseases of the coronary arteries		B. Diseases of the coronary arteries
95.	Other diseases of the heart	95.	Other diseases of the heart
	A. Functional diseases of heart		A. Functional diseases of heart
	B. Other and unspecified		B. Other and unspecified
			C. *Rheumatic heart disease*

Since plans have been made to tabulate rheumatic conditions in such a manner that the statistics will be of greater value to the medical profession, it is urged that practicing physicians throughout the United States report deaths from rheumatic heart disease whenever the rheumatic origin can be determined. Unless they are reported as such on the death certificate, these deaths cannot be tabulated as rheumatic. Whenever possible the general term "rheumatic heart disease" should be qualified by designation of the specific anatomic lesion; i. e., "rheumatic heart disease, mitral stenosis." In view of the increasing interest in rheumatic heart disease, it should not prove difficult for physicians to specify the rheumatic origin. Practically every article in the medical literature dealing with this disease and every textbook on the subject written during the past fifteen years has stressed the etiologic point of view. Immediate death resulting from acute rheumatic fever is relatively infrequent. Swift[2] estimated the rate to be from 1 to 4 per cent. Such death occurs almost always as a result of rapidly progressive carditis. However, deaths from long-standing rheumatic disease are numerous and should be specified. Experience has shown that a history of rheumatic fever or chorea can be obtained in only about 50 to 75 per cent of the cases of rheumatic heart disease. Not infrequently rheumatic heart conditions develop insidiously or else the patient fails to remember mild attacks of rheumatic fever or chorea. Language difficulties or the condition of the patient sometimes prevent the physician from obtaining a satisfactory history unless special care is taken.

By means of necropsies and microscopic examinations a large proportion of the conditions diagnosed as mitral stenosis, the majority of those diagnosed as aortic stenosis and adherent pericardium, in combination with other valvular lesions, and valvular disease of any type of long duration have been proved to be of rheumatic origin. It is desirable that a necropsy be performed whenever possible if the diagnosis is questionable, so that the condition can be established as rheumatic or nonrheumatic.

A number of conditions must be differentiated from rheumatic heart disease. Chief among these are congenital cardiovascular defects, especially in children, syphilitic aortitis with or without aortic valvular insufficiency, aortic stenosis which may be the result of calcareous changes, aortic insufficiency from arterial hypertension or arteriosclerosis, and pericardial involvement due to pyogenic infections or tuberculosis. Except when there is a history of rheumatic infection or heart disease of many years' duration, extreme caution should be used in diagnosing rheumatic heart disease solely on the basis of systolic mitral murmurs, especially when they are associated with congestive heart failure, arterial hypertension, anemia or a rapid heart action due to hyperthyroidism or other causes.

Infectious, septic or metastatic arthritis are not infrequently misdiagnosed as rheumatic fever. Not only acute bacterial endocarditis occurring as a result of pyogenic infections but also gonococcic endocarditis should be differentiated from rapidly progressive rheumatic endocarditis and subacute bacterial endocarditis superimposed on rheumatic heart disease.

SUMMARY

Changes have been made in the method of tabulating deaths from heart disease to provide for the separate

1. Hedley, O. F.: Mortality from Rheumatic Heart Disease in Philadelphia During 1936, Pub. Health Rep. **52**: 1907 (Dec. 21) 1937.

2. Swift, Homer F., in Cecil, R. L.: A Text-Book of Medicine, ed. 3, Philadelphia, W. B. Saunders Company, 1936.

tabulation of deaths from rheumatic heart conditions. The application of these changes began with the tabulation for January 1937.

Physicians throughout the United States are requested to report deaths from rheumatic heart disease as such and to qualify the term when possible by specifying the anatomic lesion in accordance with the regrouping listed in the table.

POSTOPERATIVE CORONARY ARTERY OCCLUSION

ARTHUR M. MASTER, M.D.
SIMON DACK, M.D.
AND
HARRY L. JAFFE, M.D.
NEW YORK

For some years we have been impressed by the association of operation and coronary artery occlusion in patients over 50 years of age. In our previous papers [1] evidence was presented indicating that there was no relationship between the onset of coronary occlusion and exertion, excitement, meals, rest and the like. Operation, on the other hand, was considered probably a precipitating factor. In order to investigate this problem more fully we have collected records of all cases of postoperative occlusion observed at the Mount Sinai Hospital in New York during the years 1931 to 1937. They emphasize the importance of operation in inducing occlusion, and the following analysis attempts to determine which elements of the surgical procedure lead to it.

The association of operation and coronary artery occlusion has been stressed in the past only by Saphir and his associates.[2] Several authors [3] have stated that coronary occlusion in patients with coronary sclerosis may follow operation. In a series of 192 operations,[4] five deaths were attributed to coronary occlusion subsequent to the operation. From time to time specific instances of coronary occlusion following an operation or a minor surgical or laboratory procedure, such as gastrointestinal x-ray examination or intravenous injection, have been noted.[5] But none of these authors have attempted to give evidence that the operation precipitated the occlusion.

From the Surgical Services and the Cardiographic Laboratory, the Mount Sinai Hospital.

1. Master, A. M.; Dack, Simon, and Jaffe, H. L.: The Relation of Various Factors to the Onset of Coronary Artery Thrombosis, J. Mount Sinai Hosp. **3**: 224 (Jan.-Feb.) 1937; Factors and Events Associated with the Onset of Coronary Artery Thrombosis, J. A. M. A. **109**: 546, 1937.

2. Saphir, Otto; Priest, W. S.; Hamburger, W. W., and Katz, L. N.: Coronary Arteriosclerosis, Coronary Thrombosis and the Resulting Myocardial Changes, Am. Heart J. **10**: 567 (June), 762 (Aug.) 1935.

3. Fitz-Hugh, Thomas, Jr., and Wolferth, C. C.: Cardiac Improvement Following Gallbladder Surgery, Ann. Surg. **101**: 478 (Jan.) 1935. Levine, S. A.: Clinical Heart Disease, Philadelphia, W. B. Saunders Company, 1936, p. 265. Harrison, T. R.: Failure of the Circulation, Baltimore, Williams & Wilkins Company, 1935, p. 334. Fishberg, A. M.: Heart Failure, Philadelphia, Lea & Febiger, 1937, p. 365.

4. Sprague, H. B.: The Heart in Surgery, Surg., Gynec. & Obst. **49**: 54 (July) 1929.

5. These cases have been reported by:
Hamburger, W. W.: The Differential Diagnosis of Cardiac and Gastro-Intestinal Lesions, with Particular Reference to Pectoral and Extra-pectoral Angina, M. Clin. North America **3**: 1677 (May) 1920.
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Randall, O. S., and Orr, T. G.: Postoperative Coronary Occlusion, Ann. Surg. **92**: 1014 (Dec.) 1930.
Menard, O. J., and Hurxthal, L. M.: Painless Coronary Thrombosis as a Postoperative Complication, S. Clin. North America **11**: 395 (April) 1931.
Weiss, Edward: Fatal Coronary Occlusion Following an Injection of a Local Anesthetic, M. J. & Rec. **135**: 61 (Jan. 20) 1932.
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ANALYSIS OF CASES IN WHICH THERE WAS POSTOPERATIVE OCCLUSION

Incidence and Diagnosis.—During the years 1931 to 1937, 625 attacks of coronary artery occlusion were treated in the Mount Sinai Hospital. Thirty-five, or 5.6 per cent, of these attacks followed an operation in the hospital (table 1). In every instance the presence of the occlusion was proved by postmortem examination or by electrocardiogram. Thirteen additional cases in which coronary occlusion was diagnosed by the surgeon or medical consultant have been omitted because of the lack of postmortem and electrocardiographic examination.

The diagnosis of coronary artery occlusion following operation is frequently difficult, since the very severe pain ordinarily associated with this condition may be absent; it was present in only two fifths of our cases. This disparity may be accounted for, in part, by the liberal use of narcotics and sedatives after operation. Postoperative coronary occlusion is usually ushered in by shock, with dyspnea and cyanosis, and must therefore be differentiated from surgical shock and, in particular, from shock resulting from pulmonary embolism, a differentiation which may be impossible clinically. In certain cases of pulmonary embolism, even the electrocardiogram, if only one is obtained, may resemble that recorded in cases of infarction of the posterior surface of the heart. Because of this uncertainty in clinical diagnosis our report includes only the thirty-five cases in which the electrocardiogram was definite or postmortem examination was performed.

Age and Sex.—Almost two thirds of the patients were 60 years of age or older; the average age was 62. Only four were less than 50 (table 2). Thus postoperative occlusion occurred in the older age groups, in which coronary artery disease is apt to be more prevalent.

The ratio of men to women was 4.8: 1, although the total number of operations in the hospital was equally divided between the sexes.

Previous Cardiac Disease.—Evidence of moderate to severe coronary artery sclerosis was found in all but three of the cases in which a complete history, physical examination and electrocardiographic study were recorded. A history of angina pectoris or dyspnea was frequent, and eight patients had a record of previous coronary occlusion. In thirteen cases hypertension and cardiac enlargement were of long standing. Electrocardiograms were obtained before operation in thirteen cases, and eleven presented definite abnormalities in the T wave and QRS complex. Finally, sclerosis and narrowing of the coronary arteries were present in all cases that came to necropsy.

Time of Occlusion.—Fifty-one and five-tenths per cent of the attacks of postoperative coronary artery occlusion occurred within three days after the surgical procedure (table 3). In six of these cases the onset occurred during the first twenty-four hours, in five on the second day and in seven on the third. Of the remaining attacks, fifteen occurred prior to and two during the third week. Several cases in which occlusion occurred after the third week were not included, although the attacks may have been related to the operation. It is thought [6] that coronary artery

6. Feil, Harold: Preliminary Pain in Coronary Thrombosis, Am. J. M. Sc. **193**: 42 (Jan.) 1937.

occlusion may be preceded for several days or weeks by premonitory symptoms, suggesting a gradual formation of the thrombus.

Type and Duration of Operation.—As may be seen in table 1, coronary occlusion may follow any type of surgical procedure. While most of the operations were of major severity, such as resection of portions of the gastrointestinal tract, cholecystectomy and prostatectomy, occlusion occasionally followed a minor procedure, such as paravertebral block and drainage of a phlegmon. Other operations included iridectomy, mastoidectomy, tracheotomy, thyroidectomy and herni-

TABLE 1.—*Clinical Data of Thirty-Five Cases of Postoperative Coronary Artery Occlusion*

Case	Sex and Age	Onset Post-operative	Operation	Anesthesia	Postoperative Complications	Symptoms of Attack	Electro-cardio-gram	Outcome	Necropsy
1. B. K.	♂ 66	4 hrs.	Iridectomy	Local	None	Pain, shock, cyanosis	T_1 type	Recovery	
2. S. Y.	♂ 58	4 hrs.	Gastrectomy	Spinal, gas, oxygen, ether	Bowel necrosis, mesenteric vein thrombosis	Shock	None	Death in 8 hrs.	Acute and old left circumflex occlusion, marked sclerosis
3. J. G.	♂ 67	5 hrs.	Tracheotomy	Local	None	Dyspnea, cyanosis, shock	T_3 type	Recovery	
4. J. S.	♀ 50	6 hrs.	Spinal tap	Local	None	Vomiting, cyanosis, shock	T_3 type	Recovery	
5. V. D.	♂ 69	1 day	Cholecystectomy	Local, gas, oxygen	Peritonitis	Shock	T_1 type	Death in few hrs.	Acute and old LAD* occlusion, marked sclerosis
6. I. C.	♂ 74	1 day	Cholecystectomy	Local, gas, oxygen, ether	Peritonitis	Dyspnea	None	Death in 2 days	Acute left circumflex occlusion, marked sclerosis
7. B. S.	♀ 58	1½ days	Rectal resection	Avertin with amylene hydrate, gas, oxygen, ether	Surgical shock	Shock	T_1 type	Death in 12 hrs.	
8. P. W.	♂ 64	2 days	Gastrostomy	Avertin, gas, oxygen, ether	Hemopneumothorax	Pain, pulmonary edema	T_1 type	Death in 36 hrs.	Acute and old LAD occlusion, moderate sclerosis
9. J. H.	♂ 75	2 days	Cystostomy	Local	Anemia, cystitis	Pain, dyspnea	None	Death in 2 days	Acute myomalacia, marked sclerosis
10. D. L.	♂ 72	2 days	Tracheotomy	Local	Vomiting, diarrhea	Pain, weakness	T_3 type	Death in 19 days	
11. S. G.	♂ 67	<3 days	Laparotomy	Spinal	Gastric hemorrhage and perforation	Pain, dyspnea	T_3 type	Death in 6 wks.	Acute left circumflex occlusion, marked sclerosis
12. J. N.	♂ 82	<3 days	Cystostomy	Local	Uremia	Dyspnea	None	Death in 3 days	Acute right and left circumflex, marked sclerosis
13. J. T.	♂ 69	<3 days	Drainage abscess	Local	B. welchii infection	None	None	Death in 3 days	Acute and old LAD occlusion, marked sclerosis
14. S. S.	♂ 72	3 days	Cholecystectomy	Gas, oxygen, ether	None	Sweating, pain, weakness	Acute changes atypical	Recovery	
15. H. G.	♂ 66	3 days	Release of ventral hernia	Spinal	Intestinal obstruction	Dyspnea, cyanosis, shock	T_1 type	Death in 36 hrs.	Acute left circumflex occlusion, old LAD, left and right circumflex occlusion
16. H. S.	♂ 57	3 days	Vas ligation	Local	None	Pain, fever	Normal	Recovery	
17. J. D.	♂ 50	3 days	Paravertebral block	Local	None	Pain, shock	T_1 type	Death in 4 hrs.	Acute and old LAD occlusion, marked sclerossis
18. S. D.	♀ 45	3 days	Laminectomy	Avertin, ether	Laryngitis	Shock, pain	T_3 type	Recovery	
19. S. H.	♂ 64	4 days	Prostatectomy	Spinal	Staphylococcus sepsis	Pain, shock	None	Death in 5 days	
20. A. B.	♂ 62	5 days	Prostatectomy	Local	None	Weakness, cyanosis, friction rub	Acute changes atypical	Death in 9 days	
21. L. B.	♂ 66	6 days	Transurethral resection	Spinal	None	Pain, dyspnea	T_3 type	Recovery	
22. H. P.	♂ 63	7 days	Polypectomy	Local	None	Pain	T_1 type	Recovery	
23. B. K.	♂ 48	7 days	Transurethral resection	Spinal	None	Dyspnea, weakness	T_3 type	Recovery	
24. B. F.	♂ 65	8 days	Cystostomy	Spinal	Pyelonephritis, uremia	Dyspnea, shock	T_3 type	Death in 12 days	Acute left circumflex occlusion, moderate sclerosis
25. L. M.	♂ 70	8 days	Tracheotomy	Local	Suppurative bronchopneumonia	Dyspnea, cyanosis	None	Death in 1 day	Acute right coronary occlusion, moderate sclerosis
26. E. S.	♀ 70	9 days	Mastoidectomy	Ether	None	Pain, friction rub	T_1 type	Recovery	1 yr. later right coronary occlusion, moderate sclerosis
27. B. F.	♂ 44	9 days	Ileostomy	Spinal	Tuberculous peritonitis	Shock, dyspnea, cyanosis	None	Death in 12 hrs.	Acute right coronary occlusion, moderate sclerosis
28. I. P.	♀ 55	10 days	Thyroidectomy	Avertin, gas, oxygen, ether	None	Pain, dyspnea	T_3 type	Recovery	
29. J. S.	♂ 73	10 days	Cholecystectomy	Ethylene	Cholangitis	Pain, dyspnea	Acute changes atypical	Death in 2 days	Acute LAD occlusion, marked sclerosis
30. I. F.	♂ 56	10 days	Orchidectomy	Spinal, gas, oxygen, ether	None	Dyspnea, shock	None	Death in 12 hrs.	Syphilitic occlusion of right coronary ostium
31. S. J.	♂ 51	10 days	Drainage of foot	Gas, oxygen	Gangrene of foot	Cyanosis, shock	None	Death in few min.	Acute myomalacia, moderate sclerosis, pulmonary embolism
32. N. R.	♂ 63	13 days	Prostatectomy	Spinal	Pyelonephritis	Cyanosis, Pain, shock	T_3 type	Death in 1 day	Acute myomalacia, marked sclerosis
33. L. G.	♂ 46	13 days	Herniorrhaphy	Spinal	Bronchopneumonia	Pain	T_1 type	Recovery	
34. M. R.	♀ 56	18 days	Gastrectomy	Spinal	Abscess of stump and liver, anemia	Pain	T_1 type	Death in 8 days	Acute LAD occlusion, marked sclerosis
35. J. D.	♂ 60	21 days	Rectal resection	Gas, oxygen, ether	Cerebral metastases, bronchopneumonia	Dyspnea, cyanosis, shock	T_1 type	Death in 2 days	

* Left anterior descending artery.

orrhapy. Similarly, the length of the operation varied from ten or fifteen minutes to several hours. Thirteen operations lasted one-half hour or less, twelve from one-half to one hour and ten from one to two hours.

Anesthesia.—Postoperative occlusion was not associated with any particular type of anesthesia. Local anesthesia with procaine hydrochloride was administered in twelve cases, spinal anesthesia in ten and inhalation of nitrous oxide, ether or ethylene in five. A combination of inhalation with local anesthesia was employed twice, with spinal anesthesia twice and with avertin with amylene hydrate four times. Thus a variety of types, with manifold effects, was used.

Postoperative Shock.—Surgical shock, as manifested by tachycardia, low blood pressure and the like, was present in three fifths of the patients; in half of these it was mild. Only five times did the occlusion manifest itself during the stage of shock.

Intravenous Fluids.—Ten patients were given fluids by continuous drip for from one to three days after the operation. The amount was usually less than 2,000 cc. daily. In eight of these patients the occlusion occurred during, or soon after cessation of, the infusion.

Bed Rest.—The duration of stay in bed was determined, since, as in postoperative peripheral venous thrombosis, it might be significant in coronary artery occlusion. However, the occlusion occurred on the day of operation in eight patients who were ambulatory up to the time of operation. Seven patients were in bed from one to five days before the occlusion, four patients for one week and almost half the group more than one week.

Mortality Rate and Causes of Death.—Sixty-six per cent of our thirty-five patients died; in five cases the diagnosis was made only at necropsy. This high mortality is due, in part, to the exclusion from our series of patients who survived the attack but in whom the diagnosis could not be confirmed. In eight of the twenty-three fatal attacks death was the direct result of the occlusion; in the remainder, other conditions, such as pneumonia, uremia, peritonitis and sepsis, were sufficient to produce death, and the occlusion was a contributory factor. As a rule death occurred after the more severe operations. In two cases death was instantaneous and in seven it occurred on the same day as the coronary occlusion.

TABLE 2.—*Incidence, Sex and Age Distribution of Postoperative Coronary Artery Occlusion*

Number of postoperative attacks	35
Incidence in 625 attacks of coronary occlusion	5.6%
Sex:	
Males	29 (4.8:1)
Females	6
Age:	
40-49 years	4
50-59 years	9
60-69 years	14
70-82 years	8

Postmortem Examinations.—In nineteen cases necropsy disclosed definite sclerosis of the coronary artery. Acute occlusion was found in fifteen cases, acute infarction without occlusion in three cases, and stenosis of the right coronary ostium with infarction in one case. The conditions found varied from those previously reported in a large series of cases of coronary artery occlusion [7] in that multiple acute thrombi were present in only one case and evidence of old occlusion was present in less than a third of the group, whereas in coronary occlusion in general, death usually is associated with multiple occlusions. Death in postoperative occlusion, when only one occlusion is present, is usually produced by or in combination with some other condition.

7. Master, A. M.; Dack, Simon, and Jaffe, H. L.: Mode of Death and Analysis of Fatal Cases in Coronary Artery Thrombosis, New York State J. Med. **37**: 1707 (Oct. 15) 1937.

COMMENT

In this series of thirty-five cases of postoperative coronary artery occlusion there are several cogent reasons to support the belief that the operation precipitated the attack. In the first place, the fact that in one half the cases the occlusion occurred within three days after the operation, and in six during the first twenty-four hours, seems to indicate a direct association. Secondly, in eight years there have been only four instances of coronary artery occlusion among patients who have been in the medical wards for long periods because of chronic illnesses such as peptic ulcer, carcinoma, infections and blood dyscrasias. Were the original illness and rest in bed factors in the production of the occlusion, this condition would develop more frequently in such patients. In the third place, during the period in which our collected postoperative cases occurred, the total number of attacks of coronary artery occlusion treated in the hospital was 625. Therefore the thirty-five proved attacks following operation comprised more than 5 per cent of the total, and we believe that this incidence is significant. The actual incidence is doubtless greater than 5.6 per cent, if one bears in mind the thirteen patients who had probably suffered an occlusion but were omitted from the series because of the lack of electrocardiographic or postmortem confirmation of the clinical diagnosis. Moreover, occlusions occurring after the third postoperative week were excluded, although it is possible that they were related to the operation.

TABLE 3.—*Time of Onset of Postoperative Coronary Artery Occlusion*

Days After Operation	Number
1 to 3	18 (51.5%)
4 to 7	4 (11.4%)
8 to 14	11 (31.4%)
15 to 21	2 (5.7%)

The manner in which operation precipitates coronary artery occlusion is obscure, as is the mechanism of the formation of occlusion of the coronary artery in general, and therefore a discussion of this aspect of the problem is entirely speculative. Coronary artery occlusion is an end result of long standing, progressive sclerotic changes in the coronary vessels. It follows operation only when definite sclerosis of the coronary artery is present, as was demonstrated in our cases by preoperative electrocardiograms and postmortem examinations. Occlusion occurs usually in persons in the seventh decade or older, when the sclerosis is advanced and the arteries are more liable to acute damage following operation.

It has generally been assumed that thrombosis on an arteriosclerotic plaque is the anatomic basis of acute coronary artery occlusion. However, the recent work of Winternitz and his co-workers [8] emphasizes the importance of hemorrhage into the plaque as a

8. Winternitz, M. C.; Thomas, R. M., and LeCompte, P. M.: Studies in the Pathology of Vascular Disease, Am. Heart J. **14**: 399 (Oct.) 1937.

cause of the occlusion. Whether thrombosis or hemorrhage takes place, it may be attributed to alterations in the coronary circulation, such as changes in volume, pressure and speed of flow within the arteries and in the physical and chemical properties of the blood. Such changes undoubtedly occur following operation when some degree of shock, tachycardia and dehydration frequently exists. Shock is associated with a diminution in blood volume and a drop in blood pressure.[9] The venous return to the heart and the cardiac output are reduced. These factors may result in a decrease in the speed and volume of the coronary blood flow. Tachycardia also may produce an absolute or relative insufficiency of coronary circulation, since it shortens diastole and increases the oxygen need of the heart.[10] This effect is greatest in the presence of sclerotic coronary arteries. Dehydration, like shock, is associated with a diminution in blood volume and in addition with an increase in viscosity of the blood. As we have suggested, all these factors may initiate changes in the walls of the coronary arteries leading to occlusion by hemorrhage or thrombosis.

Occasionally the diminution in coronary blood flow may be severe enough to produce ischemia of the myocardium resulting in myomalacia in the absence of occlusion. We have noted three such cases in our series.

Two additional factors associated with operation may be of significance in postoperative thrombosis. The first of these is the liberation of substances affecting the composition of the blood or acting directly on the arterial wall. In the destruction and dehydration of tissue, guanidine and histamine or similar substances may be set free.[11] In dogs, Hall, Ettinger and Banting[12] have produced hyaline degeneration and thrombosis of the coronary arteries with degeneration and infarction of the heart muscle by repeated injections of acetylcholine. However, they could not duplicate these results with histamine. It is significant that the most marked changes occurred in the older dogs. As we have already emphasized, postoperative occlusions also occur almost exclusively in patients 50 years of age or older. The second factor to be considered is the relation of infection to coronary occlusion, because of the presence of severe suppuration in many of our cases. While we concluded in the large series previously[1] mentioned that infection was too rare to be significant, it is possible that it played some part in the postoperative occlusions.

These considerations of the possible factors in operation leading to coronary artery occlusion are necessarily theoretical. It is probable that no one factor, but rather a combination of several, is sufficient to produce coronary occlusion in persons already susceptible because of long standing disease of the coronary artery. However, the relation of operation to coronary occlusion is of practical importance and, since a number of conditions associated with operation can be controlled, a study of these may throw light on the problem. It may lead to the formulation of criteria for operation in elderly persons and measures to be employed during and after the surgical procedure. Such a study should include a comprehensive history and examination of the cardiovascular system, electrocardiograms and observations of the velocity of blood flow, blood volume, platelets, total protein and coagulability of the blood before and after operation. Particular attention should be given to the blood pressure, which should be recorded frequently during and immediately after operation. Coincidentally, minute anatomic studies are being made in our cases of postoperative and spontaneous coronary occlusion, with particular reference to the formation of the arterial occlusion. In this regard the relative importance of thrombosis on an atherosclerotic plaque and subintimal hemorrhage is being determined.

9. Blalock, Alfred: Mechanism and Treatment of Experimental Shock; Shock Following Hemorrhage, Arch. Surg. **15**: 762 (Nov.) 1927. Burch, J. C., and Harrison, T. R.: The Effect of Ephedrine on the Circulation of Dogs During Spinal Anesthesia, Surg., Gynec. & Obst. **52**: 953 (May) 1931.

10. Harrison, T. R.: Failure of the Circulation, Baltimore, Williams & Wilkins Company, 1935, p. 91.

11. Harrison: Failure of the Circulation, p. 22.

12. Hall, G. E.; Ettinger, G. H., and Banting, F. G.: An Experimental Production of Coronary Thrombosis and Myocardial Failure, Canad. M. A. J. **34**: 9 (Jan.) 1936.

SUMMARY

Thirty-five proved attacks of coronary artery occlusion occurring after operation in the Mount Sinai Hospital during the years 1931 to 1937 were analyzed. Thirteen additional probable cases were excluded.

Previous coronary artery disease was probably present in every case. Two thirds of the patients were 60 years of age or older. Only four were under 50.

Surgical shock was present in 60 per cent of the cases.

Postoperative coronary artery occlusion presents a picture similar to pulmonary embolism, characterized by shock, dyspnea and cyanosis. Precordial pain is usually absent or is slight.

Sixty-six per cent of the patients died. In eight cases death was attributed directly to the occlusion; in the remainder it was associated with serious surgical complications.

Occlusion occurred in the first three days after operation in half the cases. Coronary occlusion appears extremely rarely in patients in the medical wards. The postoperative occlusions comprised 5 per cent of the total number of attacks in the hospital, an incidence which is significant.

The possible factors associated with the operation leading to coronary occlusion include surgical shock attended by a diminution in blood volume and a drop in blood pressure, tachycardia, dehydration and infection. Bed rest was not a factor.

In patients with coronary artery disease, operation may be followed by coronary occlusion. Therefore, patients over 45 should be thoroughly examined, and when coronary sclerosis is present the question of surgical intervention and the choice of surgical procedure should be given due consideration.

125 East Seventy-Second Street.

Benjamin Rush Eulogized by Two Presidents.—Perhaps the most impressive tributes paid to Rush the man, upon his death in 1813, came from two ex-Presidents, both of whom he had numbered among his dearest friends. Even discounting the possible exaggeration arising from deeply stirred emotion, this characterization of Rush by John Adams retains a high degree of significance: "As a man of science, letters, taste, sense, philosophy, patriotism, religion, morality, merit, usefulness, taken all together, Rush has not left his equal in America; nor that I know in the world." No less significant a personal tribute is that contained in a letter of Thomas Jefferson to Adams: "Another of our friends of seventy-six is gone, my dear Sir, another of the co-signers of the Independence of our country. And a better man than Rush could not have left us, more benevolent, more learned, of finer genius, or more honest." —Deutsch, Albert: The Mentally Ill in America, New York, Doubleday, Doran & Co., Inc., 1937, p. 86.

BASAL ANESTHESIA: THE USE OF EVIPAL SOLUBLE BY RECTUM

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The term basal anesthesia has been used in the literature by several authors in at least three different senses. For the sake of clarity it seems desirable at the outset to differentiate these expressions:

1. Basal anesthesia may mean simple induction anesthesia, with prompt recourse to inhalation or regional anesthesia as soon as the patient has become unconscious. In this sense it is synonymous with basal hypnosis.

2. It may refer to a deeper sleep, carried to the point of complete surgical anesthesia and maintained during the early stages of a more or less prolonged intervention, but still frankly constituting an auxiliary and preliminary procedure, whose purpose it is to usher in smoothly the chief anesthetic agent under which the substantial part of the operation is to be performed. Here the inhalation anesthesia is still intended to be a definite part of the procedure and is more than terminal when the operation is one that cannot be hurried.

3. Basal anesthesia may mean a profound state of unconsciousness, ushered in by suitable premedication and pushed to a plateau of tolerance, which is held almost indefinitely as the backbone, so to speak, of the anesthesia but is finally supplemented by brief recourse to inhalation anesthesia when, in the surgeon's judgment, the limit of safety has been reached. Here the main work is done under the basal anesthetic, and the resort, in the terminal stages of the operation, to some inhalation anesthetic such as ethylene or ether is more or less incidental.

It is in this third sense that the German authors, who have written most on the subject, use the term, especially in connection with intravenous evipal soluble basal anesthesia. Thus Anschütz,[1] who in 1933 had already studied a collection of 6,400 operations under evipal soluble narcosis (known as evipan sodium narcosis to its German originators), expressed the opinion that "evipan is good as an induction or preliminary anesthetic, but this is quite different from basal anesthesia." On the other hand, by way of contradistinction, he regarded pernocton, because of its long, slow elimination, as "not adapted to premedicamentous use but as excellent for basal narcosis, since it holds a plateau of tolerance for a long time." He added: "Evipan is pharmacologically not a good basal anesthetic because it is too quickly decomposed. The supplementary anesthetic must predominate quite early. If full surgical anesthesia is accomplished with evipan, and then an inhalation anesthetic is used merely to complete the operation, the drug becomes dangerous."

On the other hand, Coe[2] of Seattle uses the term basal anesthesia to mean "a state of unconsciousness of such degree that the patient is unaware of the events incident to his removal from his bed to the operating room and of the administration of the supplemental anesthesia. This also implies such a degree of amnesia that there is no subsequent memory of the operation."

In discussing the rectal use of evipal soluble as a basal anesthetic, I shall use the term in Coe's sense. While it is perfectly true that evipal soluble is today being used in all these ways and also as a brief, independent anesthetic for minor surgery, as Widenhorn[3] has recently pointed out, I am speaking here not of its independent use nor of its employment as the backbone of the anesthesia but always of its preliminary use immediately in advance of an inhalation or local anesthetic, to allay the anxiety of the patient, to accomplish the easy induction of general anesthesia and to promote better relaxation, while at the same time using only from one third to one half of the usual amount of ethylene, ether or other general anesthetic.

HISTORICAL

It is now almost five years since Weese[4] in Germany engaged in the accurate study of the effects of evipan sodium, or evipal soluble, which, as the sodium salt of C-C-cyclohexenyl-N-methyl barbituric acid, Kroft and Taube had isolated in 1932 in their search for a new barbiturate that should lack in the field of anesthesia the disadvantages of the older barbiturates.

The introduction of evipal soluble as an intravenous anesthetic is therefore already an old story. Its use spread like wildfire in Germany, and the extent to which it has now been adopted the world over is so vast that it defies exact figures. Veal and Hamilton[5] wrote in 1936 that it had been used "perhaps in 200,000 cases." Gwathmey,[6] earlier in the same year, said that it had been used intravenously "over 800,000 times in Europe," giving Killian[7] as his authority. But meanwhile no less an authority than Baetzner[8] with 2,000 evipan anesthesias to his own credit without a death, announced to the congress of surgeons held in Berlin in the fall of 1935 that the number of cases in which evipan had been used was estimated as already over one and a half million and that 550 original articles had been written on the subject, largely in Germany. The number of known deaths, Baetzner stated, according to the manufacturers, then stood at sixty. These were mostly due to "errors of dosage and misunderstanding of direction."

Baetzner, however, pointed out that the dosage is the alpha and omega of evipan anesthesia and that every patient is an individual in his degree of tolerance to this fascinating but capricious barbiturate. If by chance detoxification is for any reason hindered, as may happen in the case of an impaired liver or faulty circulation, a very slight degree of overdosage may kill through the accumulation of an excessive concentration in the blood, such as would be perfectly tolerated by some other individual without such functional impairment.

This relative uncertainty as to the dosage, combined with the uncontrollability of every intravenous anesthetic, once it has entered the blood, has proved at least disconcerting to those who have found in evipal soluble, in other respects, an ideal basal anesthetic. The smoothness of induction, the rapidity with which the patients fall into a quiet sleep, often even within the span of a minute, without struggle or excitement of any kind, provided there has been sedative premedication, the early muscular relaxation, the full and regular pulse, the prompt return to consciousness, but with a pleasant postoperative drowsiness that induces additional quiet sleep until the immediate postoperative pain

1. Anschütz, W.: Die Kurz- und Rauschnarkose mit Evipannatrium, Arch. f. klin. Chir. **177**: 716-734, 1933.
2. Coe, H. E.: Basal Anesthesia in Children's Surgery, Canad. M. A. J. **35**: 390 (Oct.) 1936.
3. Widenhorn, H. L.: Evipal Anesthesia and the Combination of Intravenous with General and Local Anesthesia, Surg., Gynec. & Obst. **64**: 89-93 (Jan.) 1937.
4. Weese, H.: Pharmakologie des intravenösen Kurznarkotikums Evipan-Natrium, Deutche med. Wchnschr. **59**: 47-48 (Jan. 13) 1933.
5. Veal, J. R., and Hamilton, A. S.: Further Observations on Evipal Anesthesia, Anesth. & Analg. **15**: 231-236 (Sept.-Oct.) 1936.
6. Gwathmey, J. T.: Rectal Administration of Evipal Soluble, Am. J. Surg. **32**: 411-416 (June) 1936.
7. Killian, Hans: The New German Evipan-Sodium Anesthesia, Anesth. & Analg. **13**: 177-183 (Sept.-Oct.) 227-232 (Nov.-Dec.) 1934.
8. Baetzner, Wilhelm: Die Evipan-Natrium-Narkose: Ruckblick und Ausblick, Arch. f. klin. Chir. **183**: 327-330, 1935.

has abated and, finally, the absence of postoperative nausea and vomiting—all these are advantages of a high order that place intravenous evipal soluble in a class by itself in the forefront of basal anesthetics when it is in the hands of an anesthetist who is aware of the idiosyncrasies of his patients. But it is just this difficulty of dosage and the irrecoverability of the drug after it enters the blood that prevents intravenous evipal soluble from being the ideal anesthetic.

RECTAL EVIPAL SOLUBLE ANESTHESIA

In view of these considerations, the announcement by Gwathmey [6] early in 1936 that he was using evipal soluble as a basal anesthetic by the rectal route with remarkable results was of the greatest interest. Like others, I had been using intravenous evipal soluble and my results had been gratifying, but always there had been that latent uncertainty of how the patient would react.

Gwathmey first tried the rectal method in the laboratory, using rabbits and dogs. Although rabbits were found not to be good animals for rectal experiments, he was able to prove even in these that with 5 mg. of morphine per kilogram of body weight and 50 mg. of evipal soluble per kilogram, seven of nine rabbits could be anesthetized, with no deaths. His experiments on dogs established conclusively that these could be anesthetized for forty minutes by rectal administration of a minimal dose of 40 mg. of evipal soluble per kilogram of body weight in a 10 per cent aqueous solution. Larger doses produced longer anesthesia, with complete muscular relaxation occurring within three minutes, with no visible impairment of respiration or heart action. In one dog rectal administration of 175 mg. per kilogram produced surgical anesthesia lasting seventeen hours.

From these experiments Gwathmey concluded that the margin of safety when evipal soluble is introduced into the rectum of dogs is very great, even when an injection of morphine, increasing the depressing action, has preceded it. He found that the therapeutic index (minimum lethal dose divided by anesthetic dose) is over 4.0 for rectal administration, as against 3.3 when administration is by the intravenous route. It was thus clear not only that its rectal use was safe but also that a very much longer anesthesia resulted, which is of great importance for major operations.

When Gwathmey published his report in 1936 he had made clinical use of the rectal method of administration of evipal soluble in more than 150 cases of the most various nature, using it only for preanesthetic medication and supplementing it with inhalation of ethylene and oxygen. He stated that the results were eminently satisfactory; there were no changes of any consequence in pulse, respiration or blood pressure, not even such moderate changes as have frequently been observed after intravenous administration. So far as I have been able to judge from a careful study of the literature, Gwathmey is the pioneer in this rectal use of evipal soluble. I have been able to find no other report of patients thus treated and placed on record.[8a]

REPORT OF 518 CASES OF RECTAL EVIPAL ANESTHESIA

Encouraged by Gwathmey's results, we determined to give the method a thorough trial at the Michael Reese Hospital. As a result, I am able today to report 518 cases in which, during the last twelve months, evipal soluble was used rectally, principally as a preliminary anesthetic to provide basal anesthesia before administration of ether, ethylene or local anesthesia. These cases represented a wide variety of surgical conditions encountered in general surgery, urologic, orthopedic and gynecologic surgery, many of a major nature, as well as many cases in the minor class. In a certain number of cases in which only a fleeting anesthesia was required we have used evipal soluble alone, by rectum, as for example in the removal of stitches and drains in children, in the administration of drugs for excretion urography and in three cases for relief of pain in renal colic. It is worthy of mention that in excretion urography in children it has meant all the difference between a clear film of definite diagnostic value and a hazy useless roentgenogram.

These 518 cases fall roughly into four groups: (1) kidney, ureter and bladder conditions, 203; (2) general surgical, orthopedic and gynecologic, 176; (3) in children, for excretion urography, removal of stitches, drains and the like, 136, and (4) renal and ureteral colic, three cases.

DOSAGE

The dose is determined chiefly with reference to body weight as in intravenous administration, but on a different quantitative basis, the dose being larger for rectal use. Thus, for preanesthetic rectal administration the patient, if in good general condition, receives 0.2 cc. of a 10 per cent aqueous solution of evipal soluble for every pound of body weight (instead of 0.06 cc. as in intravenous administration), making a total of 30 cc. of the 10 per cent solution for a man weighing 150 pounds (68 Kg.) that is, a dose of 3 Gm. of evipal soluble.

TECHNIC

Our technic, which is very simple, has been essentially that of Gwathmey. A preliminary enema of sodium bicarbonate solution is generally given two hours before the rectal administration of evipal solution. No soapsuds enema is required such as is given before oil-ether anesthesia by rectum. From forty to sixty minutes before the time for the evipal solution by rectum, morphine or dilaudid is injected hypodermically, thus producing a mental calm and freedom from agitation, which combination furnishes the foundation for a peaceful sleep of adequate duration and also prevents any resistance that might be offered to the rectal procedure.

The solution of evipal is prepared by dissolving 3 Gm. of evipal soluble in 30 cc. of distilled water, which is then drawn into a 30 cc. glass syringe. A very small catheter is attached to the syringe, care being taken that its caliber is such as to fit the syringe exactly, so that there shall be no loss of the anesthetic solution through leakage.

The patient is placed on his left side in a comfortable position as for any ordinary enema, after which the catheter, well lubricated, is inserted for about 4 inches (10 cm.) into the rectum. The entire contents of the syringe are then rapidly injected. The catheter is clamped and left in situ until the patient falls asleep, which usually occurs in from five to ten minutes, but occasionally in as little time as two minutes.

ADVANTAGES OF RECTAL ADMINISTRATION

The rectal injection of evipal soluble has the great advantage that it can safely be carried out by any trained nurse without the presence of a professional anesthetist. The relatively slower action of the anesthetic as it is gradually absorbed by the colonic mucosa

8a. Since this article was written, two other articles on the same subject have been published:
Hogan, Howard: Am. J. Surg., November 1937.
Harrison, J. H., and Dumphy, J. E.: New England J. Med., January 1938.

assures safety that can never be absolute in an intravenous injection. Sudden accidents do not happen. There is never any dropping of the jaw to jeopardize the open airway.

The injection, usually given one-half hour before the time set for operation, is carried out in the quiet of the patient's own room, just where he will find himself on awaking after the operation is concluded. If the patient is a child, which is very often the case—since this method is particularly indicated in children—it is very simple to explain a procedure with which the child is already probably familiar without the psychic horror of a needle inserted in a vein. The earlier sedative, which can be given to a child by mouth, will have taken the edge off his fears, and cooperation will be easily enlisted.

As the evipal solution, freshly mixed, is entirely nonirritating, there is little tendency for the small amount of fluid to be expelled. Should there be any signs of spasm or straining during instillation, the syringe should be immediately lowered below the level of the rectum to remove pressure and permit some of the solution to flow back into the syringe and to allow any gas that may be present to pass out. At the close of the injection, pressure should be maintained over the anus for five minutes.

Absorption from the colon begins almost at once. When Gwathmey introduced his oil-ether colonic anesthesia he was able to detect ether being exhaled from the lungs within three minutes of the beginning of the procedure. The absorption of evipal is not less rapid and constant. It is not so active, however, as to prevent the washing out of the anesthetic if occasion should seem to demand it, in the early stages of introduction. If there should be any reason to suspect that anesthesia is becoming too deep in the first fifteen to twenty minutes following the injection, it is easily possible to siphon out the portion not yet absorbed, thus preventing any higher concentration of evipal in the blood. In none of our cases, however, have we had occasion to do this.

The quiet sleep that is prolonged for several hours after the operation is completed under ether or ethylene is evidence of the superiority of this method over the intravenous, in which, to accomplish the same duration and level of narcosis, one must keep on putting fractional doses of evipal into the blood stream, under the constant watchful eye of a skilful and experienced anesthetist, who must be ready at an instant's notice to administer pyridine betacarbonic acid diethylamide (coramin) or other cardiac and respiratory stimulant if the anesthesia becomes too deep. Gwathmey asserts that since evipal soluble by rectum affects only the sensory nerves and has no effect whatever on the heart, it is an unusually safe basal anesthetic. Not even when the amount administered far exceeded the standard dose of 0.2 cc. per pound has he ever had to use either metrazol or carbon dioxide and oxygen.

We can absolutely confirm Gwathmey's experience. After long use of evipal soluble intravenously under a wide variety of conditions and in patients requiring the most varied kinds of surgical intervention, we do not hesitate to say that the results we are obtaining from the rectal use of evipal soluble are in no way inferior to those which we have attained by the intravenous method, and the safety provided by the rectal administration appears to us so incomparably great that we have come to regard it as actually superior to the earlier method, in which an injection made too rapidly might easily lead to an overdose.

RESULTS IN OUR SERIES OF 518 CASES

The results in all our cases have been most gratifying. In practically every case the patient fell into a quiet, restful sleep within five to ten minutes of the time the injection was given. There was complete relaxation, with deep rhythmic breathing and good heart action. The blood pressure dropped slightly in most cases, but not more than a few millimeters. As a terminal or supplementary anesthetic we made use of ether or ethylene in the majority of cases. We found the circulatory and respiratory changes following rectal administration of evipal soluble to be practically nil compared with those following other preanesthetic drugs. In eleven cases (2.1 per cent) there has been marked confusion or delirium on waking. Most of these occurred early in our series, and they can properly be attributed to an idiosyncrasy to barbiturates which some patients manifest. This agitation can be materially lessened by making sure that the patient has had no other barbiturate by mouth or otherwise for at least twenty-four hours before the administration of the evipal soluble.

COMMENT

The use of some preanesthetic sedative is practically universal in present day surgery. It was realized not only that a smoother anesthesia could thus be produced, with great psychic advantage to the patient and better muscular relaxation for the benefit of the surgeon, but also that such preoperative medication would result in less inhalation anesthetic being required, since the drugs would reinforce one another. The presence of postoperative pain as a rule necessitates the use of some hypnotic or analgesic. It was a distinct step in advance, therefore, when surgeons began to give this sedative injection before instead of postponing it until after operation. Patients who would otherwise have been agitated with nervous fears were thus enabled to approach operation with perfect calmness.

To secure this state of mental relaxation, morphine, dilaudid, scopolamine, chloroform induction, evipal soluble intravenously and various older barbiturates, notably pernoston, sodium amytal and pentobarbital sodium, are all employed, and each has its adherents. A comparison of the relative efficiency of these agents may therefore be in order:

Morphine.—No premedicament has had a longer history as an induction anesthetic than morphine, usually combined with atropine or scopolamine. The great weight of authority was with this alkaloid until the intravenous use of evipal soluble came on the scene and even since the latter's arrival morphine continues to enjoy the position of choice as a preliminary medicament for the induction of evipal anesthesia itself. Its use prolongs the anesthesia, prevents muscular spasm and completely abolishes restlessness through its action on the cerebral cortex. It produces a preoperative euphoria unequaled by any other agent, lessens excitement during induction, relaxes the muscles, diminishes liability to shock and lengthens the recovery period so that there is less postoperative discomfort or pain. But, on the other hand, morphine depresses the respiratory apparatus, blocks secretion, especially through the kidney function, and, most of all, stimulates the vomiting center to such an extent that some patients actually prefer to accept postoperative pain.

Scopolamine (levorotatory).—This is hypnotic and antispasmodic in dosage of from $\frac{1}{200}$ to $\frac{1}{100}$ grain (0.3 to 0.6 mg.). Like morphine, it depresses the cerebral cortex, the respiratory center, the heart action

and the reflexes. Its combination with morphine enchances these effects and tends to prevent a stage of excitement that may precede its sedative effect if it is given alone. While full amnesia is not invariably attained by this combination, the sedative effect is very striking, making a subsequent nitrous oxide-oxygen anesthesia much more satisfactory. Just as with morphine alone, nausea tends to follow its use, and in certain cases scopolamine promotes a hemorrhagic tendency in incision of the skin and mucous membranes.

Dilaudid.—This opium derivative, far superior to morphine in the opinion of many, meets the demands for an efficient preoperative sedative, offering the quickest and most intensive action, combined with a minimal effect on the gastro-intestinal tract and the least danger of habit formation. All psychic and motor excitation are reduced to a minimum before narcosis, and a quiet sleep may be expected within ten minutes at the least after intramuscular injection. Its use is cheaper than that of morphine, a lesser quantity is required and the amount of inhalation anesthetic necessary is greatly diminished. Gwathmey found that he obtained better results with rectal administration of evipal soluble when he substituted premedication with dilaudid for that with morphine. Postoperative nausea and vomiting have been entirely absent, in contrast with 16 per cent of patients being thus affected when morphine hydrochloride was used. Our own experience confirms these observations.

Chloroform.—As an induction anesthetic chloroform has many serious disadvantages. While it is inhaled more easily than ether and is generally regarded as pleasanter to take, the sudden intake of an excessive concentration of chloroform stimulates the vagal center in the medulla to inhibit the heart's action. Acting as an irritant to the cardiac muscle, it sometimes leads to ventricular fibrillation. Collapse followed by resuscitation may again be followed by secondary collapse. Postoperative vomiting and headache are frequently late sequels to its use—the result of delayed poisoning, with symptoms of shock and not infrequently complications of the chest. As the induction stage is the most risky period with chloroform, many anesthetists who like it for a maintenance anesthesia will not use it for induction.

Barbiturates (exclusive of evipal).—The barbiturates came into use in 1903, when veronal led the way and was much used as a basal anesthetic to precede chloroform. Since then thirty barbiturates have been found, which have been used as hypnotics or basal anesthetics. Any barbiturate properly administered before anesthesia is capable of producing a mild surgical anesthesia, but most of them tend to produce subsequent headache, nausea and vomiting. The best known and most extensively used are sodium amytal (sodium isoamylethylbarbiturate), pernoston (the sodium salt of secondary butyl-beta-bromallylbarbituric acid) and pentobarbital sodium (sodium ethyl-l-methyl-butyl barbiturate). Any of these may be administered by mouth, vein or rectum. All have had their ardent adherents as preanesthetic agents, but all carry their dangers. When injected intravenously, the amount required to produce complete anesthesia is dangerously near the fatal dose. This is especially true of pernoston. The latter is pleasant to take and consciousness is lost fairly quickly, but the margin of safety is narrower than that of the other two barbiturates named. Sodium amytal, while effective, causes too great a drop in blood pressure if given too rapidly and may bring on pulmonary edema and pneumonia if given in excessive dosage. The postoperative danger of the tongue falling back is considerable. Pentobarbital sodium is the most efficient hypnotic of the three, but it was pentobarbital sodium (nembutal) that led Lundy [9] in 1931 to conclude that intravenous anesthesia by means of the barbiturates alone is not justified because of occasional untoward results. As a basal anesthetic, however, it provides a pleasant method of bridging the gap between consciousness and unconsciousness before general anesthesia. All these barbiturates decrease nausea to some degree, so that vomiting, if present, is slight and is seldom remembered.

In 1930 Fitch, Waters and Tatum,[10] after prolonged laboratory and clinical research, reported: "Amytal produced a much longer sleep than pernocton or nembutal. Occasionally excitement or delirum follows the use of all three drugs. The long period of detoxification and depression after administration of amytal and other long acting barbiturates constitutes a serious impairment of their value for surgical purposes. The more rapidly acting barbiturates furnish a distinct improvement and indicate possibilities and direction for further improvement." Thus was the way pointed toward evipal soluble.

Intravenous Evipal Soluble as a Basal Anesthetic.—With the introduction of evipal soluble, the long awaited quick-acting and quick-receding basal anesthetic was realized. Though nonvolatile, it surpasses the volatile anesthetic agents in the rapidity of its detoxification and elimination. While it has a relatively short tolerance stage (from ten to twenty minutes) as compared with other barbiturates, this stage can be prolonged at will by giving fractional doses and repeating the administration as often as signs of returning consciousness appear, thus keeping the patient just within the limits of full anesthesia. This was done at first with the greatest possible caution, but today a constantly increasing number of anesthetists are pushing the use of evipal soluble as a complete anesthetic. I am concerned here with its use only as a basal anesthetic.

The rapidity with which the patient falls asleep is truly dramatic; he may stop talking in the middle of a sentence, and consciousness may be lost within fifteen to twenty-five seconds after injection is begun. His color does not change; his breathing is deep and rhythmic; his heart action is unaffected. A slight fall of blood pressure usually occurs, but this returns to its former point on recovery. No changes in blood chemistry occur, and there is no postoperative nausea. In some cases in which morphine premedication has been employed before the injection of evipal soluble, the vomiting that occurs is due to the former drug, not to the evipal.

But evipal soluble has the disadvantage of all intravenous drugs that, once injected, it cannot be recovered nor can its action be reversed. Its very speed is against such reversal, so that, in case of untoward effect, some cardiac and respiratory stimulant such as coramin or metrazol must be close at hand and immediately administered or the respiration and heart action may stop. In addition, as Dunphy and his associates [11] have recently emphasized, this inherent danger is increased by a great

9. Lundy, J. S.: Experience with Sodium Ethyl (l-Methyl-Butyl) Barbiturate (Nembutal) in More Than 2,300 Cases, S. Clin. North America **11**: 909 (Aug.) 1931.

10. Fitch, R. H.; Waters, R. M., and Tatum, A. L.: Barbituric Acid Hypnotics in Surgery, Am. J. Surg. **9**: 110-114 (July) 1930.

11. Dunphy, J. E.; Alt, R. E., and Reiling, W. A.: Evipal Anesthesia: A Clinical Study of 300 Cases, Surg. **1**: 265-275 (Feb.) 1937.

individual variation in the effective dose. It follows, then, that certain patients are highly resistant to evipal soluble, while certain others are inordinately sensitive to it. The impossibility of recognizing these types in advance of administration is what constitutes the danger in its intravenous use. While the actual number of deaths attributable to this cause is small (sixty in perhaps one and one-half million cases), these fatalities must nevertheless be borne in mind and should serve as a warning when a choice is possible between the uncertainties of intravenous administration and the safety of the rectal use of evipal soluble.

CONTRAINDICATIONS

There are not many contraindications to the administration of evipal soluble by rectum. Just as is the case in its intravenous use, subjects known to have impaired liver function or myocardial degeneration are poor risks, since it is known that evipal soluble is detoxified in the liver, and a good circulation is required to carry it there as well as to remove its disintegrated components. Regardless of which organ does the eliminating of an anesthetic, its inactivation, as Weiss [12] well says, is always dependent on proper circulation. This, rather than the danger from direct action on the heart, is one of the main reasons why the use of nonvolatile anesthetics is potentially dangerous when the individual tolerance is not known.

Anemic and weak persons should not be given evipal soluble, nor should those in a cachectic or septic condition. There are also grounds for withholding it from asthmatic patients, some of them having had attacks during its administration. It should also be denied to those subjects who have an abnormally low blood pressure and to those who have recently received other medication with barbiturates.

Beyond these obviously unsuitable groups there are no known contraindications to the rectal administration of evipal soluble.

CONCLUSIONS

1. The rectal administration of evipal soluble as a basal anesthetic has been found to be a practical and satisfactory method, eliminating certain dangers inherent in the intravenous use of this powerful barbiturate.

2. A report is made of 518 cases thus managed at the Michael Reese Hospital, representing a wide variety of different surgical conditions and operative procedures.

3. The technic is simple and requires no special training.

4. The administration can be carried out readily by any trained nurse without the presence of a professional anesthetist.

5. In no case did there occur any untoward symptom during operation, and in only 2 per cent of the cases did we observe any postoperative excitement.

6. The rectal method of administration has the advantage of producing a smooth basal anesthesia of extended duration, without the necessity of adding continued fractional doses, and it requires only from one third to one half of the amount of ether or ethylene for supplementary anesthesia.

7. The method offers all the advantages of intravenous evipal soluble without the disadvantages inherent to all intravenous anesthetics.

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12. Weiss, Soma: The Clinical Use and Dangers of Hypnotics, J. A. M. A. **107**: 2104-2109 (Dec. 26) 1936.

EMERGENCY TREATMENT IN ASTHMA (ASTHMATIC CRISIS)

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DETROIT

In the treatment of allergic asthma one is occasionally confronted with a serious emergency which has received little attention in recent textbooks. Its clinical picture is characterized by severe collapse with constant extreme dyspnea to the point of exhaustion. Some authors [1] refer to this condition in speaking of "status asthmaticus." Others have termed it "intractable asthma," thus indicating the inadequacy of the generally recognized methods of treatment. Fuchs [2] has recently called this condition "asthmatic crisis." This probably is the most appropriate term. It implies that this condition results either in death or in at least a temporary amelioration of the asthmatic condition.

Concerning its onset, Clarke states that the asthmatic crisis usually climaxes a chronic state of asthma; but it may also occur during a series of acute asthmatic attacks. On the basis of its occurrence in an individual who has previously been suffering from asthma, it is possible to draw a definite line distinguishing it from allergic shock. The latter condition would in every other respect be identical with the asthmatic crisis were it not possible to arise in any type of other sensitization besides asthma.

MECHANISM

Because of this close relationship,[3] certain data obtained on the origin of allergic shock will aid in the understanding of the asthmatic crisis. The syndrome of allergic shock,[4] it should be borne in mind, results, first, from extreme sensitivity, secondly, from an excessive amount of an antigen or the simultaneous absorption of several antigens to which sensitivity exists or, thirdly, from too sudden absorption (intravenous) of a dose of antigen which ordinarily would not produce shock.[5] The manifestations of allergic shock depend largely on what organs have previously been affected.[6] In the most common instance of allergic shock, namely, the "constitutional reaction" in a hay fever patient after an injection of an excessive dose of pollen extract, the skin and the upper respiratory tract are primarily subject to the allergic lesion, namely, the wheal; but practically any other organ may also be affected.[4] In patients with chronic asthma, however, the sudden influx of an excessive amount of injected antigen affects, primarily, the pulmonary tissue, causing severe asthma without the association of urticaria, nasal and conjunctival symptoms which are otherwise common. The same is true if the routes of entry of the antigen are other than by injection. Thus the asthmatic crisis can be considered as allergic shock in a patient whose "shock organ" has previously been the lungs, because he had been suffering from asthma.

Concerning the sources and the clinical manifestations of allergic shock induced by means other than injec-

1. Clarke, J. A.: Status Asthmaticus of Severe Subacute Asthma, J. Allergy **4**: 481 (Nov.) 1933. Sterling, A. T.: Status Asthmaticus, ibid. **6**: 189 (Jan.) 1935. Kahn, I. S.: Status Asthmaticus, ibid. **8**: 158 (Jan.) 1937.

2. Fuchs, A. M.: The Interruption of the Asthmatic Crisis by Tribromethanol (Avertin), J. Allergy **8**: 340 (May) 1937.

3. Some of the authors mentioned do not even make a distinction between the two conditions.

4. Waldbott, G. L.: Systemic Reactions from Pollen Injections, J. A. M. A. **96**: 1848 (May 30) 1931.

5. Waldbott, G. L., and Ascher, M. S.: The Role of Accidental Puncture of Veins in the Production of Allergic Shock, Ann. Int. Med. **9**: 1232 (March) 1936.

6. Waldbott, G. L.: Allergic Shock from Substances Other than Pollen and Serum, Ann. Int. Med. **7**: 1308 (April) 1934.

tions, data on thirty-nine cases were collected through an inquiry among allergists by Ascher and myself.[7] Some of the correspondents hesitated to differentiate between the asthmatic crisis and allergic shock and therefore included instances of both conditions. Asthma was present in all but two cases. In six, no other manifestations were noted; asthma and urticaria occurred in eighteen; asthma and gastrointestinal symptoms such as vomiting and diarrhea in three; asthma with urticaria and gastrointestinal symptoms in eight; asthma and convulsions in two. In fifteen patients, ingestion of food was responsible, egg and seafood being the most common antigens. In five cases the ingestion of drugs (acetylsalicylic acid in four of them) caused allergic shock. In nine cases the inhalation of animal emanations and foods were responsible. In two instances contact of the skin with food was the causative factor, and in five cases contact with other substances was responsible. Sensitization to cold produced shock in two patients, and heat affected one person. In this group there were thirteen females and twenty-six males; ten persons were above the age of 15 and twenty-nine were below.

PATHOLOGY

Before I discuss treatment I shall refer briefly to the mode of death in these cases. It is generally agreed that death in allergic asthma is due to obstruction of the bronchi by thick tenacious mucus that is formed during the course of an attack. This obstruction results in asphyxiation. The earlier writers on the pathology of asthma have referred to the marked bronchospasm which may or may not, in itself, be sufficient to accomplish complete bronchial obstruction by narrowing the bronchial lumen. Relatively less common is death due to the formation of edema in the alveolar spaces, which was described by Dean[8] as a characteristic lesion in allergic shock and which was also the outstanding finding in asthma of short duration.[9]

Another less frequent mode of death in asthma is the development of areas of bronchopneumonia. They may result from infection of atelectatic lesions induced by the obstruction of small bronchi or they may represent a secondary infection of edematous areas. Concerning the possibility of cardiac death as the result of asthma, there has been considerable discussion in the literature. Most authors agree with Lamson and Butt[10] that the heart plays a minor, if any, role in the production of death in allergic asthma.

TREATMENT

Recent publications on the therapy of the asthmatic crisis deal primarily with the utter hopelessness of our therapeutic efforts. Certain measures are proposed by which the authors induced cessation of seizures. Kahn[1] advocates the rectal administration of ether and oil, Fuchs[2] suggests that tribromethanol in amylene hydrate be given rectally. Farago[11] recommends the inhalation of carbon dioxide, and Barach,[12] that of helium and oxygen. Except in the paper by Clarke,[1] very little is said as to how the general management of such cases should be conducted. A discussion of this problem, however, is of great importance because, in the opinion of many, death in asthma can often be directly attributed to certain therapeutic measures.

In accordance with the mechanism and the pathology of the asthmatic crisis, four principles are outlined which can be regarded as the key for successful treatment: (1) extreme caution in introducing into the system any substance that may be harmful to the patient; (2) elimination of substances which may have harmed him regardless of whether or not positive skin reactions to these substances have been obtained; (3) symptomatic relief to counteract existing cyanosis, to allay cough, to support the nutritional state and to afford rest and relaxation; (4) support of the patient's specific resistance against those antigens to which he is sensitive (hyposensitization).

1. *Avoidance of Harmful Antigens.*—The results of our inquiry[7] indicate the danger of the introduction of foods and drugs which may aggravate the situation. Foods that have not been eaten for a long time were found to be particularly harmful, especially if taken in large quantities. The danger of acetylsalicylic acid has been sufficiently stressed in the literature.[13] Quinine, phenolphthalein and acetanilid deserve, in my experience, second consideration among drugs. The intricacy of this problem is illustrated by pointing out that the same drugs, especially acetylsalicylic acid, are likely to give relief in certain patients. This has been brought out by Duke[14] and has frequently been corroborated by my own clinical observations. On the other hand, the most severe attacks of asthma that I have had occasion to observe occurred shortly after the taking of acetylsalicylic acid. Indeed, this has been so striking an experience that the fact that an attack was extremely severe has led me, on two occasions, to the correct conclusion that this drug had brought on the attacks.

A similar situation exists with other drugs and antigenic treatments which are recommended for asthma. The simple application of procaine hydrochloride on the mucous membranes of the nose has produced severe attacks of asthma.[15] Such substances as peptone, tuberculin, milk or typhoid and other bacterial vaccines may at times give relief, especially if they are administered in highly diluted doses; yet often they constitute a source of marked aggravation of asthma, sometimes even of death.[16]

The use of morphine in asthma has been condemned by many experienced in the treatment of asthma, mainly for two reasons: 1. Morphine depresses the respiratory center and the cough reflex, thus interfering with a vital protective process; namely, the expectoration of mucous plugs from the bronchi. 2. Patients are often sensitive to morphine. This is indicated by the relatively frequent occurrence of general pruritus and urticaria and the formation of a local wheal following its administration. As will be shown later, relaxation of the patient in this condition is a therapeutic consideration of paramount importance. This drug, however, can well be replaced by less harmful ones.

7. Unpublished records on allergic shock induced by means other than injection.

8. Dean, H. R.: The Histology of a Case of Anaphylactic Shock, Brit. J. Path. & Bact. **25**: 305 (May) 1921.

9. Waldbott, G. L.: Pathologic Changes in Asthmatic Infants, Am. J. Dis. Child. **49**: 1531 (June) 1935.

10. Lamson, R. W., and Butt, E. M.: Fatal "Asthma," J. A. M. A. **108**: 1843 (May 29) 1937.

11. Farago, P.: Carbon Dioxide Inhalation in the Therapy of Bronchial Asthma, Orvosi hetil. **77**: 926 (Oct. 14) 1933.

12. Barach, A. L.: Use of Helium in Treatment of Asthma and Obstructive Lesions in Larynx and Trachea, Ann. Int. Med. **9**: 739 (Dec.) 1935.

13. Prickman, L. E., and Buchstein, H. F.: Hypersensitivity to Acetylsalicylic Acid (Aspirin), J. A. M. A. **108**: 445 (Feb. 6) 1937.

14. Duke, W. W.: Aspirin Allergy: A Method of Testing for Aspirin Sensitiveness and Method of Avoiding Aspirin Catastrophes, J. Allergy **4**: 426 (July) 1933.

15. Waldbott, G. L.: So-Called Thymic Death: V. Respiratory Sensitization to General and Local Anesthetics, Arch. Otolaryng. **17**: 549 (April) 1933.

16. I have the record of an allergic child who died from an intravenous injection of typhoid vaccine. Sections of the lung, however, did not show definite evidence of sensitization. In another case in which death followed an injection of procaine for tonsillectomy, such evidence existed.

2. *Elimination.*—In every case of severe asthma, elimination of all possible antigens should be attempted, regardless of whether or not sensitivity to such substances is evident. The stuffing of a mattress or a pillow is apt to cause a great deal of irritation in the upper air passages because of its close proximity to the asthmatic patient. Inhalation of such harmful substances should be prevented by covering the bedding with air-tight rubberized materials. Unquestionably the greatest assistance in eliminating harmful environmental factors is afforded through hospitalization. There is reason to believe that an asthmatic patient, particularly if symptoms have been present for some time, acquires many sensitizations arising from his immediate surroundings, such as house dust, certain types of upholstering in furniture and possibly certain fungi present in his home; in short, substances which cannot easily be eliminated. The patient's removal into a hospital induces, in most instances, a dramatic abatement of symptoms, especially if it is a fireproof and air conditioned structure and, therefore, contains less dust and mold-producing substances.

One of the measures on admission to the hospital should be a thorough cleansing of the bowels by means of a large saline or dextrose enema. Its purpose is to eliminate digested and undigested food particles, absorption of which may have been instrumental in the production of the attack. Retention of water and of some of the dextrose and salt from these enemas may take place and assist the patient in his defense. Soaps should not be added, as untoward reactions, such as severe diarrhea or increase of dyspnea, may result if sensitization to soaps or some of the constituents (orris root) exists. For the same reason vegetable cathartics should be avoided.

The discontinuance of epinephrine is unquestionably one of the most important procedures. Most of these patients have been treated with this drug for some time. Epinephrine exhibits certain peculiarities that have not been sufficiently stressed in the literature. An asthmatic person very rarely requires more than from 0.3 to 0.5 cc. subcutaneously of epinephrine in order to obtain its full therapeutic effect. Only in the most acute types of allergic reactions are larger doses necessary. After a patient has taken epinephrine for some time, his tolerance to this drug increases. By increasing the doses and shortening the intervals between injections, the patient soon reaches a stage at which even much larger amounts are of little or no benefit. In such instances discontinuance of the drug for a few days will reestablish the previous efficacy of the smaller doses. That such discontinuance can be carried out very abruptly without any marked difficulties whatever was demonstrated by observations on two patients who had taken as much as 1 ounce and 1¼ ounces (30 and 37.5 cc.) respectively of epinephrine a day for many months. In both patients severe asthma of long duration promptly subsided on withdrawal of the drug and the subsequent management thus became much less difficult. Whether or not the drug itself has the tendency to keep up the asthmatic state it is difficult to say. The numerous small areas of infection of the skin which are often encountered as the result of improper sterilization of the hypodermic needles may aid in lowering the "allergic balance." If one recalls the clinical appearance of those in the habit of using epinephrine, their striking pallor, frailness, tremor and tachycardia, one cannot help but feel that the withdrawal of this drug constitutes a major therapeutic procedure in meeting the emergency of the asthmatic crisis. The same, to a lesser extent, may be said about ephedrine, because of its pharmacologic similarity to epinephrine; there is also the added chance that sensitization to ephedrine may be established by its too frequent use.

Among other eliminative procedures may be mentioned the puncture and irrigation of sinuses when considerable amounts of purulent secretion are present in the sinuses. In rare instances this may check the emergency state.

3. *Symptomatic Treatment.*—Practically every asthmatic patient encounters an aggravation of symptoms on exertion. Insistence that the patient secure sufficient relaxation and sleep is of the utmost importance. This may be a most difficult task, because sensitization to the drug to be employed may be encountered. I found barbiturates advantageous for inducing rest. Some are inclined to follow, instead, the procedure of Kahn;[1] i. e., to administer from 5 to 7 ounces (150 to 210 cc.) of ether dissolved in equal parts of oil by rectum. Others may follow the recommendation of Fuchs;[2] namely, rectal instillation by either a syringe or a male catheter of tribromethanol in amylene hydrate. The dose recommended is 60 mg. per kilogram of body weight. While both measures are highly commendable, it should be borne in mind that sensitization to ether[15] as well as death following the administration of tribromethanol in amylene hydrate has been encountered.[17] Opinions may differ as to which is the most preferable means of sedation. Whatever one's choice may be, it is best to insist on employing only one hypnotic because of the increased risk of sensitivity when several hypnotics are used. Drugs that have been taken before without ill effect should be given preference. The first dose should be very small and its effect carefully watched.

If the hypnotic should not be sufficient to produce the desired degree of relaxation, the extreme exhaustion of the patient may require a narcotic. When this necessity arises pantopon (hydrochlorides of the alkaloids of opium, principally morphine) may be resorted to. The chief advantage of this drug over morphine is said to lie in its lesser action as a depressant on the respiratory center, since some of the alkaloids which it contains are respiratory stimulants[18] and thus counteract the paralyzing effect of morphine. Clinically, one is impressed by the slight degree or absence of cyanosis when this drug is used.

Cough is a source of a great deal of discomfort. It is practically always followed by increased dyspnea. Simple cough syrups containing ammonium chloride and potassium iodide may be of some assistance. Compound cough mixtures should be avoided because of the increased chance of sensitization to some of the drugs employed.

Cyanosis, which is often in evidence, may be combated by oxygen and carbon dioxide and, whenever available, by a mixture of 79 per cent helium and 21 per cent oxygen.[12] The greater diffusibility of helium accounts for a more complete displacement of residual air than by other gases. In evaluating this treatment, however, one should bear in mind that, even in severe allergic asthma, cyanosis and anoxemia are not always present; that is, if no other complications such as heart disease or bronchiectasis exist and no narcotics have been given before. The dramatic results from the

17. Discussion on Fuchs,[2] before the thirteenth annual meeting of the Society for the Study of Asthma and Allied Conditions, Atlantic City, N. J., May 1, 1937 (unpublished).

18. Macht, D. I.: Action of the Opium Alkaloids, J. Pharmacol. & Exper. Therap. 7: 339 (Oct.) 1915.

inhalation of helium gas as reported by Barach [12] and by Maytum and his associates [19] may in some instances be explained by the displacement from the alveoli of air which is laden with harmful inhaled antigens and by its replacement with the dust-free gas. Therefore, its use is indicated even when no cyanosis is present.

In order to maintain the patient's nutritional state, intravenous injections of from 25 to 50 per cent solution of dextrose may be given. In addition to its caloric value, the osmotic effect of this hypertonic solution may aid in the removal of edematous fluid from the affected lungs. Mainly for the latter purpose, Gay [20] recently suggested the intravenous administration of 100 cc. of 50 per cent sucrose to which 0.5 cc. of 1:1,000 epinephrine solution was admixed. He observed instant cessation of extreme attacks in six asthmatic patients. Some of his patients had previously failed to respond when intravenous injections of dextrose and epinephrine were given individually.

Ascher and I have for several years used blood transfusions from either nonallergic persons or treated, symptom-free asthmatic patients. The principal purpose of these transfusions is their nutritional value. We considered it possible also that a certain immune effect might be established which could be compared to that of transfusions in certain infectious diseases. This conception is made more plausible through the recent experiments of Cooke and his associates.[21] They report the presence of protective or immune substances against specific antigens in allergic patients who had become symptom free. Whether or not these substances also exist in normal individuals is not indicated. Our own experiments along these lines have not as yet been conclusive. Clinically, however, transfusions from both normal and symptom free asthmatic patients were found very valuable. An intradermal skin test with the donor's blood and a preliminary small intravenous injection is first given in order to minimize the risk of untoward allergic reactions. (These might occur if the patient is sensitive to antigenic substances present in the blood of the donors.[22]) Between 200 and 400 cc. of blood is then given in the usual manner. The patient's exhausted and debilitated state nearly always responds. With the precautions outlined I have not had any allergic reaction in more than forty transfusions given in cases of this type and in other cases of allergy.

4. *Hyposensitization.*—Specific therapy has received very little attention in the literature on severe asthma. In my experience it is as indispensable in this emergency as in any other type of allergy. Waldbott and Ascher [23] have recently enlarged on the method of rapid hyposensitization. This is based on the observation that a patient with hay fever may obtain instant relief during the hay fever season following one or several injections of specific extract, provided the dose is large enough to produce a moderately sized local wheal and not too large to cause a generalized reaction. Guided by this principle of giving a sufficiently large amount and, at the same time, avoiding an overdose, this treatment can be made both effective and safe. The antigens chosen should be those which were found to be the main causative agents of this attack, on the basis either of skin tests or of clinical experience. During the summer months, the respective pollen in the air at the time of the attack should always be considered as a potential cause.[24] A scratch test should first be performed in order to gage the patient's tolerance. In case of a strongly positive skin reaction no injections should be given, since repeated scratch tests with this antigen may accomplish a desensitizing effect. If the test is negative or slightly positive, an initial dose of a highly diluted extract (as low as from 1:10,000 to 1:1,000,000) is administered, preferably intracutaneously, and its effect carefully watched. If the injection does not produce a wheal, the dose can be worked up rapidly at intervals of one half to one hour until a local wheal appears at the site of the injection. From now on, future injections should be cautiously gaged and the intervals between them lengthened until the effect of the previous injection has well subsided. This may require from two to twelve hours and more. If properly gaged, the asthmatic attacks begin to clear up simultaneously with the development of a wheal, sometimes as dramatically as after an injection of epinephrine. If improvement does not ensue, other antigens should be chosen, because the one administered previously may not be one of the dominant agents in the production of this attack. During the course of the treatment one should constantly be watchful for an excessive local reaction at the site of injection and of an aggravation of the attack by the treatment. The injections should then be discontinued for several hours or for days until the flareup is thoroughly controlled. When the injections are started again, considerably smaller doses should be employed. If carried out with these precautions, rapid hyposensitization treatment constitutes the method of choice in this emergency.

BRONCHOSCOPIC TREATMENT

In addition to these methods of treatment, another means of therapy should be available to all those treating a patient with severe asthma; namely, bronchoscopy. It should be held in readiness in case the other measures fail. This treatment is often too indiscriminately used in asthma, especially if advocated for the administration of iodized oil.[25] In the asthmatic crisis, however, especially when the emergency is extreme, the introduction of a bronchoscope into the lungs should be regarded as a life-saving measure. Its purpose is to remove the thick, tenacious mucus, which is such a grave source of danger to the asthmatic patient, and to dilate spastic bronchi.

In a review of the records of 1,431 allergic asthmatic patients, it was found that there were seventy-six who had been hospitalized on one or more occasions because of unusually severe attacks. In only eight cases did bronchoscopic treatment have to be resorted to. Extremely severe and "intractable" attacks promptly subsided on the removal of mucus from the bronchi in all but one case:

Mrs. R. L. B., aged 32, had been in a severe state of asthma for six weeks. She had given strongly positive cutaneous reactions to various antigens, especially grass pollen. During a two weeks stay at Grace Hospital she had shown practically no response to any of the aforementioned measures, including an attempt at hyosensitization. On bronchoscopy, considerable

19. Maytum, C. K.; Prickman, L. E., and Boothby, W. M.: Use of Helium and Oxygen in the Treatment of Severe Intractable Asthma, Proc. Staff Meet., Mayo Clin. **10**: 788 (Dec. 11) 1935.

20. Gay, L. N.: Communication at the round table discussion on "Intractable Asthma" at the New York City meeting of the Society for the Study of Asthma and Allied Conditions, Dec. 11, 1937.

21. Cooke, R. A.; Barnard, J. H.; Hebald, Selian, and Stull, Arthur: Serological Evidence of Immunity with Coexisting Sensitization in a Type of Human Allergy (Hay Fever), J. Exper. Med. **62**: 733 (Dec.) 1935.

22. Ramirez, M. A.: Horse Asthma Following Blood Transfusion, J. A. M. A. **73**: 984 (Sept. 27) 1919.

23. Waldbott, G. L., and Ascher, M. S.: Further Observations on Rapid Hyposensitization, Ann. Int. Med. **10**: 1556 (April) 1937.

24. Waldbott, G. L.: The Treatment of Chronic Intractable Asthma with Pollen Extracts, Ann. Int. Med. **7**: 508 (Oct.) 1933.

25. Criep, L. H., and Hampsey, J. W.: Therapeutic Value of Iodized Oil in Bronchial Asthma, J. Allergy **9**: 237 (Nov.) 1937.

spasm of the upper bronchial tree with but little edema of the mucosa and practically no secretion was noted in the bronchi. The day after the bronchoscopy she received 10 cc. of blood intramuscularly from an asthmatic patient who had been symptom-free for more than one year. The attack promptly subsided within half an hour. However, it should be stated that the date of this treatment coincided with the termination of the grass pollen season.

Among these seventy-six cases, death occurred in only one case:

Mrs. R. S. had for eighteen years had severe allergic asthma which had been complicated by manifestations of cardiac insufficiency. During an aggravation of the attack evidence of cardiac failure and pulmonary edema developed which terminated in fatal pneumonia.

It may be of statistical interest that only three others out of the 1,431 patients with allergic asthma died while under my care and that drugs seemed to be responsible in every single instance. One patient (J. H.) died during a moderately severe attack a few seconds after he had administered to himself 1 cc. of epinephrine. There was blood at the site of injection and the typical blanching effect on the skin was not present, indicating that a vein may have been punctured and the drug thus had been injected intravenously. Another chronic asthmatic patient (J. T.) was said to have taken a "patent medicine" containing coal tar products for a headache at a time when he had been entirely free from asthma. Within a few minutes severe shock, dyspnea, cyanosis and convulsions developed, followed immediately by death. The third patient (Mrs. L. S.) died in some unexplained manner, after having taken a hypnotic during the course of a light attack of asthma. She appeared to be in a natural sleep, which gradually turned into a comatose state from which she could not be aroused. Death occurred two hours after she took the hypnotic. No wheezing had been noticeable before her death.

SUMMARY

1. The "asthmatic crisis" represents either a sudden aggravation or the climax of a progressive state of asthma. It constitutes a grave emergency.

2. The following therapeutic principles are suggested:

(*a*) Extreme caution should be used in the introduction into the system of antigens that might aggravate the condition, particularly drugs.

(*b*) Such measures of elimination as are usually emphasized in the treatment of allergic disease should be carried out. Hospitalization is of great assistance in accomplishing this. In addition, withdrawal of epinephrine and similar drugs that have been given before is advisable.

(*c*) Symptomatic relief can be accomplished by measures which secure rest and relaxation, allay cough, control existing cyanosis and aid in the maintenance of the patient's nutritional state.

(*d*) Specific hyposensitization with antigenic extracts that are considered the chief source of the attack should be employed as the method of choice.

3. Among seventy-six cases thus treated, one death occurred and eight patients were not benefited until bronchoscopy was resorted to. In seven of the eight cases, the removal of thick tenacious mucus from the bronchial tree and an attempt at mechanical dilation of the bronchi resulted in prompt cessation of the emergency.

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THE LOP EAR

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The majority of articles on the malformations of the external ear have been published in European journals and comparatively few are in the English language. Most of these papers are limited to a report of an isolated case. Still more rare is the paper that deals with the ear in which all of the components are present but which are shaped so that the ear protrudes abnormally from the head. This deformity is commonly designated as a "lop ear" or "bat ear." The present article calls attention to this abnormality with especial emphasis on the explanation of the embryologic development and the surgical correction.

FORMATION

The external ear arises from six distinct tubercles and a ridge of tissue, all of which are grouped around the dorsal limit of the first branchial groove, which in turn gives rise to the external auditory canal. Three of these primordia are derived from the first branchial arch and four from the second. Fusion of these tubercles takes place in a regular sequence, so that in the completed ear the antitragus and the anterior curve of the helix are derived from the three tubercles of the first arch, and the remainder of the helix, antihelix, tragus and lobule from the three tubercles and the ridge of the second arch. Any one or more of the several primordia may fail to develop, resulting in a microtia with or without an atresia of the external auditory canal. Occasionally the elements of the ear may be completely formed but give the appearance of having been crumpled or crushed against the head. The latter deformities may be due either to faulty fusion of the tubercles or to some abnormal intra-uterine pressure.

During the third month of fetal life the ridge which is to form the helix grows more rapidly than any other portion of the ear, so that it projects forward and covers the three primordia of the second arch. Normally, as the other components develop, the helix is gradually pushed upward and backward to form the outermost border of the ear. However, if there is a delay in development during this third month of fetal life the helix will remain in this forward position and continue its growth in a direction that is at a right angle rather than at a tangent to the head. The curved ridge of the antihelix does not develop, so that the scapha may be regarded either as absent or as continuous with the curvature of the concha. This ear becomes the true lop ear.

As the infant develops, the conchal portion of the cartilage which at birth had an abnormal forward curvature continues to grow so that this forward curvature becomes even more pronounced. For this reason lop ears that are not noticeably abnormal at birth become more and more prominent during infancy and early childhood. This deformity is therefore often considered to be an acquired one rather than one of congenital origin and the blame is wrongly placed on the nurse or the mother who has allowed the ears to protrude beneath a cap or bonnet or has allowed the baby to sleep with the ears folded forward.

From the Surgical Service of the Children's Hospital, and the Department of Surgery, Harvard University Medical School.

INCIDENCE

In comparison with many congenital anomalies, malformations of the external ear occur infrequently and are seldom seen repeatedly in the same family tree. During the twenty year period from Jan. 1, 1918, to Jan. 1, 1938, 108,744 children were admitted to the

Fig. 1 (case 1).—Both ears are symmetrically prominent.

Children's Hospital. Of this number only forty-six patients were treated for malformations of the ear and of these forty-six, only twenty-one had lop ears. In interpreting these figures it must be remembered that these anomalies exist much more commonly but are of such a nature that their correction is not considered important. It is interesting to note that all but two patients with lop ears were children of Irish extraction. This series is too small to justify any definite conclusion with regard to nationalities but it is a suggestive point since the racial distribution of patients treated at the Children's Hospital is far different from the percentage that occurs in this series.

In the group of twenty-one patients with lop ears there were sixteen boys and five girls. The deformity in the female becomes of less importance because it

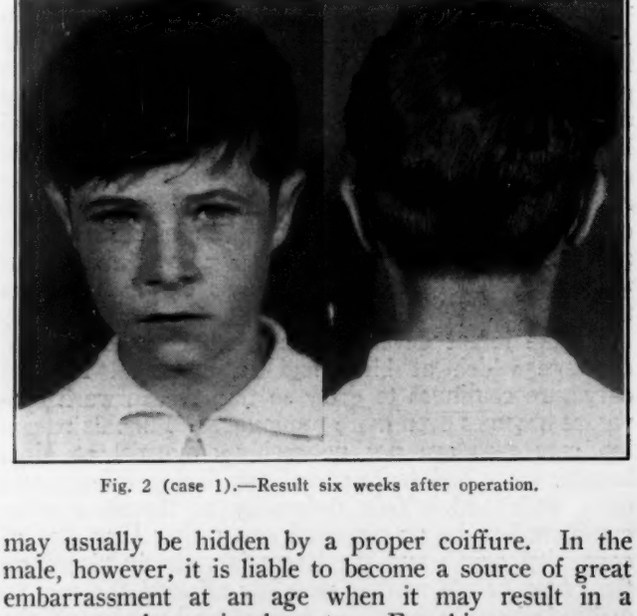

Fig. 2 (case 1).—Result six weeks after operation.

may usually be hidden by a proper coiffure. In the male, however, it is liable to become a source of great embarrassment at an age when it may result in a permanent change in character. For this reason some attempt at correction should be made before the boy begins to associate with children of his age, who may be tactlessly cruel about the size and shape of his ears.

TREATMENT

On the faulty hypothesis that this is an acquired condition, attempts to correct the deformity have frequently involved fixation of the ear in its normal position by means of adhesive strapping, elastic caps, ear muffs or other mechanical appliances. In this series of twenty-one cases every patient seeking correction of a lop ear at the Children's Hospital gave a history of long continued trials with these mechanical restrainers. A failure was reported in every case in which these palliative measures were used.

It must again be emphasized that the causation of the lop ear is a congenital overgrowth of the conchal cartilage and a lack of the formation of the antihelix and scapha. It therefore follows that, in order to effect a restoration of the ear to its normal contour, this excessive cartilage must be reduced in size and reshaped so that the ear will lie back in its normal alinement with the head. The mechanical appliances may be of some aid in holding the ear back after its surgical correction, but they cannot be expected to bend the excess cartilage of the true lop ear permanently.

Fig. 3 (case 2).—Marked protuberance of both ears.

Many operative procedures have been outlined for the correction of the lop ear but in my opinion there are only three methods that meet the fundamental requisites for a satisfactory repair. These requisites are that: 1. The angle formed between the ear and the mastoid region must be reduced to at least 30 degrees. 2. The convolutions of the cartilages must be shaped to form an antihelix and a scapha, both of which are absent in the lop ear. 3. The skin incision must be hidden behind the ear so that it is not readily noticeable.

FIRST METHOD

In correcting a lop ear the surgeon must plan to make the curvature of the antihelix less acute and the scapha slightly wider than in the normal ear. For the purposes of orientation the position of the planned antihelix is first marked off on the anterior surface with sterile Bonney's blue paint.[1] Along this line, punctures are made through the entire ear with a needle carrying the paint, so that the curvature of the new antihelix will be projected as a line of dots in the skin on the back of the auricle. These dots will then outline one side of an ellipse. The remainder of the ellipse is marked off so that one half of it lies on the posterior surface of the auricle and the other half over the mastoid region. Procaine hydrochloride and epinephrine are injected into the skin over the front and

1. Components of Bonney's blue paint are brilliant green 87 Gm., crystal violet 87 Gm., 95 per cent alcohol 10 ounces, distilled water 10 ounces.

back of the ear so as to facilitate the dissection of the cartilage and to prevent excessive bleeding. The ellipse of skin, previously outlined on the posterior surface, is now removed. An incision is next made through the cartilage along the line demarcated by the ink dots previously produced by the perforating needle. Great care should be taken to avoid buttonholing the skin on the anterior surface. Through this incision the cartilage is then freed carefully from the skin on the anterior surface so that the edge of the outer portion of cartilage can be inserted under the edge of the proximal portion. The cut edge of the inner or proximal cartilage will then form the ridge of the new antihelix. As the two parts of the cartilage slide over each other it is found that the ear will begin to assume a normal position. In most cases the outer or distal cartilaginous plate, which is now to form the structural foundation of the scapha, will be too wide. For this reason a sickle or crescent shaped portion of this outer cartilage must be removed before the cartilaginous convolutions simulate a normal appearance. It follows that the ear which protrudes markedly will require the excision of a wider strip of cartilage than one that is less prominent. When a satisfactory correction has been obtained, the two layers of cartilage are sutured to each other by interrupted sutures of

Fig. 4 (case 2).—Result one month after surgical correction. This patient also has a facial asymmetry not related to the deformity of the ears.

0000 chromic catgut. To insure their anchorage to the head, both are sutured as a layer to the postauricular fascia of the scalp. This brings the skin edges together so that they may be closed with a continuous subcuticular stitch of 0000 plain catgut.

The suture line is then painted with varnish [2] and a meshed tape applied. Pressure now must be applied to keep blood from collecting between the undermined skin and the underlying cartilage. To insure this, each concavity on the anterior surface is packed with fine gauze that has been cut to the desired shape. These packs are held in place with an elastic net (Elastonette) over which are placed a knit skull cap, elastic adhesive (Elastoplast) and an elastic crape bandage (Vic or Ace). It is important that these bandages exert enough pressure to control all the oozing but not enough to endanger the viability of either the skin or the cartilage. The first dressing is removed on the third or fourth day for inspection of the color of the ear. If the procedure has been done with gentleness and if the skin has not been undermined too extensively, the ear should be of normal color. If there are any areas which are dusky or blue, the ear must be examined for hematoma. If a hematoma has formed it must be expressed completely to avoid a slough of the skin overlying it. If the hematoma is incompletely expressed the result on healing will be a thickened, unsightly "cauliflower ear." If the ear remains blue even after the hematoma has been removed, hot packs are advisable to stimulate the return of the normal circulation. With proper technic and a proper dressing none of these difficulties should arise. A dressing with identical pressure is then reapplied until the eighth or ninth day. After this time the patient is allowed to wear a pair of soft cotton pads held in place with elastic ear muffs. During the day when he is under close surveillance these ear muffs may be removed, but during the night or when at play they should be worn to protect the ear against sudden trauma.

2. Components of this varnish are colophony 3 drachms, compound tincture of benzoin 4 drachms, tolu balsam 1 drachm, iodoform 1 drachm, ether 5 ounces.

Fig. 5 (case 3).—Ears protruding beyond a right angle from the head.

At the end of a month the use of these pads may be discontinued and the result at that time may be considered as permanent.

This method of repair is applicable for all types of lop ears, but it is particularly indicated for those in which the conchal cartilage is more prominent than the rest of the ear. It has the obvious disadvantage of obliterating to a certain degree the normal postauricular sulcus. If the ear curls forward beyond a right angle from the head, this method of repair will necessarily result in a very shallow postauricular sulcus. For the latter case the second method is better chosen.

THE SECOND METHOD

The same preparation of the ear and marking of the curve of the new antihelix is to be followed as that outlined for the first method. The ear is similarly injected with procaine and ephinephrine to aid in the dissection of the cartilage. In this repair a posterior incision is made through the skin and through

Fig. 6 (case 3).—Result four weeks after operation.

the cartilage in the line marked by the ink of the perforating needle. An ellipse of skin is not removed in this repair. After the cartilage has been freed from the anterior skin the two cut cartilaginous edges are turned to point anteriorly. This places the distal and proximal portions of the cartilage back to back. They are held in this position with horizontal mattress stitches of white Deknatel silk. The use of black silk is to be avoided because later it may show through the thin skin on the anterior

surface. The use of catgut is also undesirable because of the possibility of a reaction to the suture in the region of the knot with a resultant loss of the tension on the suture. When the cartilages are sewn in this buckled position the conchal portion of the ear may be too prominent, so that it may project too far beyond the helix when the patient is viewed from the front. If this occurs, narrow strips may be shaved from the rim of the proximal portion of the cartilage until the desired height is produced. When the ear has been buckled back into the corrected position it will be found that the edges of the skin are approximated and are easily closed with a continuous subcuticular stitch of 0000 plain catgut. A dressing similar to that described in the first method is then applied.

This repair is applicable for the ear with a prominent pinna but without marked enlargement of the conchal cartilage. It is slightly more difficult to match the position of the two ears with this method because the cartilage of one ear may buckle more readily than that of the other and thus produce an asymmetric result. This method has one real advantage of retaining the postaural sulcus. Occasionally this sulcus becomes too deep and is therefore unsightly. This happens in the ear that is abnormally large in proportion to the other features and is best repaired by the third method.

THIRD METHOD

The third method combines features of both methods 1 and 2. An ellipse of skin is removed as in method 1 but it is about half the width of that which would ordinarily be advocated for method 1. The cartilage is also excised as in method 1 but the shape of the piece removed is more pear shaped than crescentic, the widest portion being at the base of the conchal portion of the ear. The edges of the remaining cartilage are then approximated back to back as in method 2. After this line of sutures is placed, the proximal portion of the cartilage is sewn to the galea of the scalp in the area made by the removal of the ellipse of skin. Then the skin is closed in the fashion used in both previously described methods.

The advantages of method 3 are that: 1. The postaurol sulcus is retained but is not as deep as in the second method, owing to the removal of the narrow ellipse of skin. 2. The antihelix becomes smooth and cordlike in contradistinction to the sharper ridge formed in methods 1 and 2. This is due to the fibrous tissue, which fills in under the excess skin on the anterior surface which previously overlay the portion of the cartilage that was removed. 3. With this repair the ear is in a potentially more secure position than it was in method 2 because of the added line of sutures holding the proximal cartilage to the head. 4. The size of the entire ear is reduced.

CONCLUSIONS

1. The malformations known as "lop or bat ears" are congenital in origin.
2. True lop ears warrant plastic repair in childhood before the patient suffers embarrassment from a deformity which is so readily correctable.
3. Three methods of plastic correction of this anomaly have been developed. The principles are based on experiences with twenty-one patients who have been treated for this deformity in the Children's Hospital of Boston.

300 Longwood Avenue.

Medical Schools Guard Truth.—Every medical school is a guardian for the future of truth. What can be done to help those who come after us to acquire that balanced judgment by which alone such errors can be avoided? Is the present system of medical education entirely free from blame in the matter? I trow not.—Langdon-Brown, Walter: The Dead Hand in Medical Science, *Lancet* **1**:280 (Jan. 29) 1938.

OBESITY IN THE ADOLESCENT CURED WITHOUT INJECTIONS

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Obesity during the pubertal period usually raises the diagnostic question of adiposogenital dystrophy, based presumably on deficiency or at least disorder of gonads or pituitary or thyroid or of a combination. Definite diagnosis is often difficult in boys, and only boys are considered in this paper; the main reason is that the fat deposit above the symphysis pubis masks the size of the external genitalia.

INCIDENCE

The frequency of occurrence in boys of high school age was estimated by Shapiro [1] in 1929 as 2.6 per cent and by Taylor and Schaefer [2] in 1937 as 2.3 per cent.

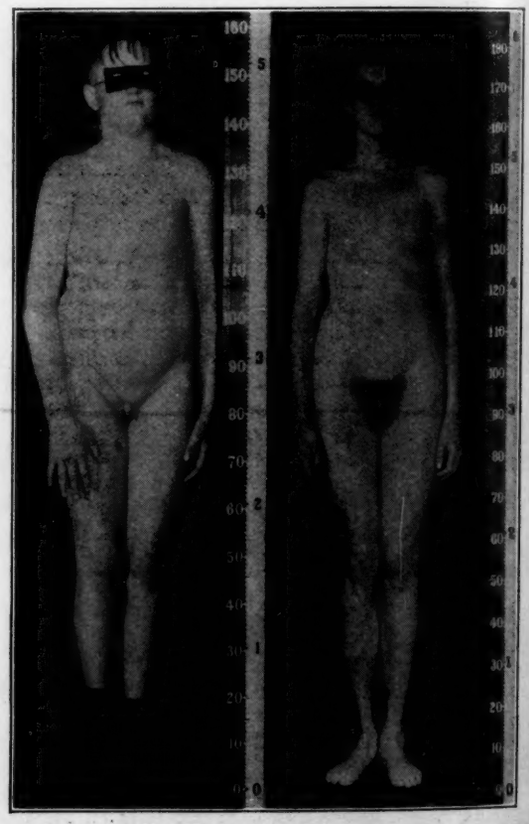

Fig. 1.—Patient 1 before and after treatment. In the illustrations the appearance before treatment is given at the left, the appearance after treatment at the right.

Economic advantages may increase the frequency, for Gray and Ayres [3] in 1931, working in private schools, found higher rates, which may be reviewed. In order to be extremely conservative, they first discarded only those who appeared definitely outside the limits of normal, judged not merely by fat but by the medical appearance or history or both; of these there were eighteen.

From the Medical and Pediatric Clinics, Stanford University School of Medicine.

1. Shapiro, Shepard: Endocrine Disturbances Among High School Boys: I. Adiposodystrophia Genitalis, Endocrinology **13**: 144 (March-April) 1929.
2. Taylor, N. M., and Schaefer, R. L.: Endocrinopathies Among Young Delinquents, Endocrinology **21**: 191 (March) 1937.
3. Gray, Horace, and Ayres, J. G.: Growth in Private School Children, with Averages and Variabilities Based on 3,110 Measurings on Boys and 1,473 on Girls, from the Ages of One to Nineteen Years, Behavior Research Fund Monograph, University of Chicago Press, December 1931, pp. 3, 7, 219-230.

Those who were not diagnosed frankly pathologic did, however, show so many overweights that they were classified by descriptive diagnoses and more accurately by calculating the percentage over or under weight, abbreviated as W ± %. The normal weight

TABLE 1.—*Descriptive Diagnoses: Distribution, and Corresponding Degree of Overweight W ± %*

	Descriptive Diagnoses	Percentage of 4,553 Boys and Girls	Mean W ± % 3,085 Boys
1	2	3	4
T+++	Excessively thin	1	−11
T++	Presumably too thin	1	−11
T+	Rather thin and perhaps below par	3	− 6
NT	Rather thin but definitely well and active, "naturally thin"	2	− 9
N	Normal	84	+ 1
HK	Husky and sturdy but not fat	3	+15
F+	Rather plump	3	+15
F++	Borderline obesity	2	+24
F+++	Strikingly fat	1	+31
		100	

standard used was the weight for height table for private school boys by Gray and Fraley.[4] Each child's actual weight minus the predicted weight found in the table

Fig. 2.—Side view of patient before and after treatment.

was divided by the predicted weight and multiplied by 100, i. e., $100 \frac{W-WP}{PW} = W \pm \%$, thus giving in one figure the amount the child was over or under weight. After tabulation of the distribution of children among these descriptive diagnoses, the proportion in the various classes was so nearly the same for each sex that the two sexes were pooled, giving the percentage distribution in table 1, column 3. Then, taking the boys only, the percentages were averaged for each descriptive diagnosis, showing for the fatter classes striking degrees of overweight, table 1, column 4, toward the foot of the column.

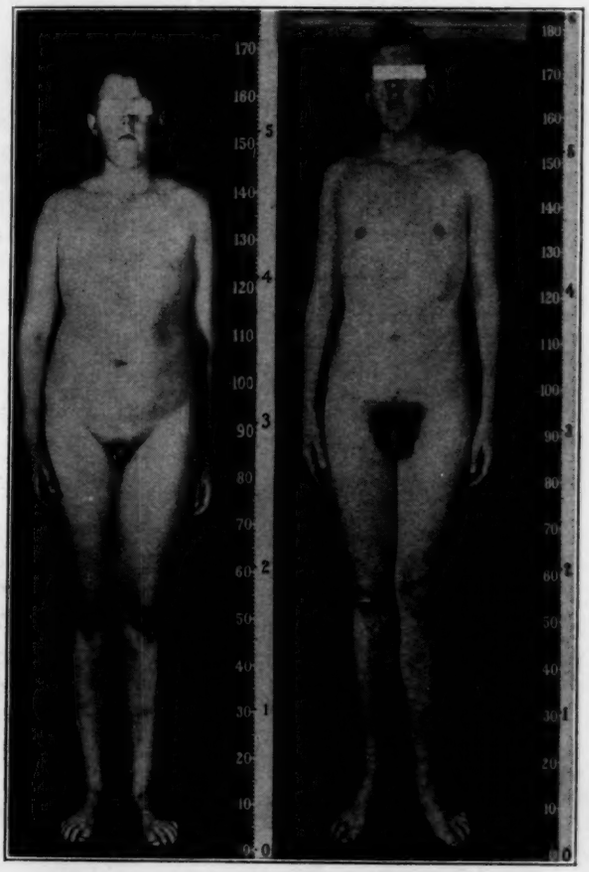

Fig. 3.—Patient 2 before and after treatment.

The overweights were more striking when arranged by frequency in table 2; for all ages 1-19 years see column 2, or more concisely column 3; and similarly

TABLE 2.—*Frequency Distribution of Degree Overweight W ± %*

W ± %		Percentage of 3,096 Boys of 1-19 Years		Percentage of 1,977 Boys of 12-19 Years	
1		2	3	4	5
+70 to	+74	0.03		0.05	
+65	+69	0.00		0.00	
+60	+64	0.06		0.10	
+55	+59	0.03		0.05	
+50	+54	0.16		0.15	
+45	+49	0.32		0.40	
+40	+44	0.39		0.55	
+35	+39	0.65		0.65	
+30	+34	1.03		1.10	
			2.67		3.05
+25	+29	1.55		1.35	
			4.22		4.40
+20	+24	2.81		2.90	
			7.03		7.30
+15	+19	5.26		5.00	
+10	+14	9.40		8.56	
− 9	+ 9	65.14		61.99	
−10	−14	9.11		10.72	
−15	−19	3.17		4.26	
−20	−24	0.74		0.95	
−25	−29	0.10		0.15	
−30	−34	0.03		0.05	
		100.00		98.98	

for the adolescent epoch from ages 12 to 19 years see column 4, condensed in column 5. More briefly still it is notable, in both series, and whatever the criterion

4. Gray, Horace, and Fraley, Frederick: Growth Standards, Height, Chest-Girth and Weight for Private School Boys, Am. J. Dis. Child. **32**: 554 (Oct.) 1926.

chosen, that marked obesity is more frequent than reported by the authors cited; this is clear from table 3.

ENDOCRINE TREATMENT

Recent literature on reduction treatment in fat boys with more or less definite secondary sex backwardness, by injections of pituitary or testicular extract, will undoubtedly lead to frequent administration of these substances. In some cases this is a promising and

TABLE 3.—*Frequency of Overweights*
(Condensed from Table 2)

Criterion	Percentage of All Boys 1-19 Years	Percentage of Boys 12-19 Years
30% or more overweight	2.7	3.0
25% or more overweight	4.2	4.4
20% or more overweight	7.0	7.3

desirable procedure. In all cases, however, the physician may be invited to consider: 1. That such extracts may, after wider use, prove to have some deleterious by-effects, so that their use should not be indiscriminate.

Fig. 4.—Side view of patient 2 before and after treatment.

2. That successful reductions following endocrine injections may be due less to the medication than to Mother Nature. We have long felt that such spontaneous reductions of weight during adolescence are commoner than is appreciated; we know no figures as to the frequency of such encouraging outcomes relative to the frequency of persisting disorder but we can now report two examples, fortified by "before and after" photographs and rather thorough studies of build. The anthropologic items measured were over a dozen, together with a somewhat larger number of indexes derived from the absolute measurements. Description of the items, landmarks and other aspects of technic have been reported elsewhere.[3] The interpretation of such a set of measurements after plotting on a profile chart has been used in the past by others, was further described and illustrated by eighteen examples in the book referred to, and was similarly applied to our patients. In this paper, however, these extensive measurements and charts will not be reproduced, but only a brief selection of the more pertinent.

In order to clarify the significance of the figures about to be reported, the percentile has been calculated for many of the items for the individual with respect to a hundred normal persons of the same age; for example, let us take the stature of the first patient, 1,643 mm. at the age of 12; this is 139 mm. taller than the average for private school boys aged 12; dividing this by 67.4 mm., the standard deviation, we find his deviation from the average to be 2.06 SD or 2.06 times the standard deviation, and looking up this value in the probability table, we see that ninety-eight out of 100 boys of his age would be smaller than he, therefore we say he is in the 98 percentile rank. The two case histories follow.

DIET TREATMENT

Treatment was begun by our usual obesity diet of carbohydrate 80, protein 60, fat 40 Gm., namely, a bread and flour free regimen but including milk and vitamins. The food was not weighed by either of these patients. As soon as they had shown cooperation in facing the restrictions, the diet was increased, mainly to give a protein intake of about 1.5 Gm. per kilogram of body weight normal for the patient's age and height.

CASE 1, *History.*—J. C. M. was referred by Dr. Donald Marshall. The family history shows that the parents and the grandparents were all born in the United States, of northwestern European ancestry, and were correspondingly large.

The patient's birth weight was 3,860 Gm. (8½ pounds), i. e., a big baby. Examination showed an orchidopexy scar, urine and blood normal, blood pressure 115 systolic, 75 diastolic, and basal metabolic rate —16 per cent.

TABLE 4.—*Family History of Patient 1.*

Father	1,900 mm. (6 ft. 3 in.)	202 pounds
Mother	1,625 mm. (5 ft. 4 in.)	155 pounds
Father's father	1,880 mm. (6 ft. 2 in.)	192 pounds
Father's mother	1,753 mm. (5 ft. 9 in.)	166 pounds
Mother's father	1,829 mm. (6 ft. 0 in.)	192 pounds
Mother's mother	1,575 mm. (5 ft. 2 in.)	151 pounds
Sister M. at 24 years	1,714 mm. = 98 rank	60.8 Kg. = 72% rank
Sister D. at 23 years	1,613 mm. = 73 rank	57.6 Kg. = 51% rank
Sister J. at 20 years	1,598 mm. = 84 rank	51.7 Kg. = 84% rank

TABLE 5.—*Measurements in Case 1 Before and After Treatment.*

	Before		After	
Age	Age 12.3 years		Age 16.2 years	
Date	May 27, 1933		April 2, 1937	
Weight	56.8 Kg. (125 lbs.)	= 99 rank	71.2 Kg. (157 lbs.)	= 88
Stature	1,643 mm. (64.7 in.)	= 98 rank	1,852 mm. (72.9 in.)	= 97
Bieristal	280 mm.	= 99 rank	309 mm.	= 99
Sitting/S	50.5%	= 80 rank	50.4%	= 83
W/S in Kg./mm.	34.6%	= 98 rank	38.4%	= 76

Build.—The illustrations tell the story. Both boys were tall, long legged (i. e., rather eunuchoid), and fat both with regard to age and with regard also to height.

The improvement in slenderization is most clearly shown by the weight/stature index as converted into terms of percentile rank; whereas "before" the patient was fatter for his height than 98 per cent of boys of his age, "after" the period of treatment he was fatter than only 76 per cent; that is, 24 per cent of boys his age would be as fat as he.

CASE 2.—*History.*—W. B., of old American stock, weighed 3,118 Gm. (6 pounds 14 ounces) at birth; i. e., he was normal. His father, mother and one sister were normal in build.

Physical examination was negative. Urine and blood were normal. The basal metabolic rate was 13 per cent. The dextrose tolerance test gave the following readings: fasting 91 mg., one hour 177 mg., two hours 121 mg., 4 hours 120 mg., and

TABLE 6.—*Measurements in Case 2 Before and After Treatment.*

	Before		After	
Age	14.3 years		19.3 years	
Date	May 25, 1932		May 8, 1937	
Weight	78.1 Kg. (172 lbs.)	= 99 rank	79.1 Kg. (174 lbs.)	= 94
Stature	1,720 mm. (67.8 in.)	= 89 rank	1,856 mm. (73.1 in.)	= 95
Bieristal	294 mm.	= 99 rank	299 mm.	= 93
Si/S	50.6%	= 65 rank	51.3%	= 87
W/S	45.4%	= 99 rank	42.6%	= 91

no glycosuria. Bone age was normal; the sella was normal. The diet consisted of carbohydrate 125 Gm., protein 70 Gm., fat 70 Gm.

Build.—He was like the other patient: tall, eunuchoid and fat.

SUMMARY

Two boys with obesity, genital hypoplasia, marked tallness and eunuchoid legs were observed for four years (from 12 to 16) and for five years (age 14 to 19), with diet but no endocrine injections. During observation their builds became sufficiently normal to eliminate any question of the need of added hormone. Measurements are given, but the improvements are more strikingly and simply manifest by photography.

THE ACTION OF HYPOGLYCEMIA ON THE CENTRAL NERVOUS SYSTEM

AND THE PROBLEM OF SCHIZOPHRENIA FROM THE PHYSIOLOGIC POINT OF VIEW

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It is known that the anoxic and the hypoglycemic syndrome are similar (Kleitman and Magnus,[1] Olmsted and his collaborators[2]), but only recent work has shown that the two conditions are related in the essential physiologic mechanism involved. Holmes[3] and Wortis[4] have shown that the oxidation rate of brain tissue decreases with decreasing sugar concentration in the suspension fluid. Myerson and his collaborators[5] found that the oxygen and sugar uptake by the brain are reduced in hypoglycemia.

In order to substantiate the anoxia theory of insulin convulsions and to extend it to the preconvulsive state, a series of experiments was carried out which may be briefly reported.

1. Gellhorn and Yesinick[6] showed in narcotized dogs that the blood pressure response accompanying a rise in intracranial pressure up to the blood pressure level is greatly increased in anoxia. An almost identical response could be obtained by substituting hypoglycemia for the inhalation of low oxygen.

2. Glickman and Gellhorn[7] carried out numerous experiments on rats which were temporarily subjected to a relatively mild degree of anoxia (low pressure chamber). It was found that after a standard dose of insulin the insulin convulsions occur much earlier and are more severe than in control experiments carried out at normal barometric pressure.

3. Ingraham, Moldavsky and Gellhorn[8] found in narcotized dogs that the blood pressure rise resulting from the inhalation of low oxygen is greatly increased during hypoglycemia. The inhalation of 6.2 per cent oxygen for from two to three minutes, which at a blood sugar level of about 100 mg. per hundred cubic centimeters either does not alter the blood pressure or produces only a slight rise of a few millimeters of mercury, may at a blood sugar level of 40 mg. per hundred cubic centimeters produce a rise of 80 or 100 mm. of mercury. At the same time Cheyne-Stokes breathing may be observed. The reaction is reversible on the injection of dextrose. Fructose is less effective and galactose is unsuited to restore the original blood pressure reaction to low oxygen. The reaction is due to the lowering of the blood sugar by insulin and not to other changes in the blood.

From these experiments and the literature cited the following conclusions may be drawn:

1. Hypoglycemia acts on the central nervous system in a way similar to that of oxygen deficiency. In both instances the rate of oxidation is reduced.

2. The sensitivity of the central nervous system to oxygen deficiency is greatly increased in hypoglycemia.

3. The combination of hypoglycemia plus oxygen deficiency induced by insulin and the inhalation of an oxygen deficient gas mixture produces a more effective stimulation of the sympathetic nervous system measured by the blood pressure response than even the inhalation of pure nitrogen.

It seems reasonable to apply the physiologic principles elucidated in the foregoing experiments to the clinical problem presented by schizophrenic patients. It is to be expected that insulin improves schizophrenic patients by the same mechanisms which are called into play in the animal experiments that have been described; i. e., (1) by reduction in the oxidation rate in the central nervous system and (2) by the stimulation of the sympathetic centers resulting from the diminution of the oxidative metabolism.

Space does not permit of a detailed discussion of the reasons which induced various authors to use different remedies for the treatment of schizophrenia. It may suffice to state that insulin,[9] metrazol,[10] the prolonged narcosis treatment,[11] the injection of sodium cyanide,

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the inhalation of from 30 to 40 per cent carbon dioxide [12] and, finally, the administration of cocaine have been introduced into psychiatry for various clinical and psychologic reasons. In no case was an attempt made to understand the physiologic mechanism involved. A study of the literature and my own experiments on metrazol indicate, however, that the various drugs mentioned have a very similar action on the central nervous system. Metrazol is a highly effective stimulant of the sympathetic system even under conditions in which the convulsions are suppressed (curare [13]). The narcosis treatment involves a reduction in the oxidation rate of the brain [14] and is not infrequently accompanied by signs of sympathetic discharge at the end of the treatment.[15] Sodium cyanide and the inhalation of 30 or 40 per cent of carbon dioxide greatly interfere with the oxidative metabolism of the brain and stimulate the sympathetic system. And, finally, cocaine, which has been used occasionally with some success, is a typical stimulant of the sympathetic centers. From this it may be concluded that various treatments used in schizophrenia are effective because they produce, by a profound alteration in the metabolism of the central nervous system, a sufficiently strong and lasting excitation of the sympathetic nervous system and thereby bring about a far reaching reorganization of all mental processes.

If the interpretation given is correct, it is to be expected that schizophrenia is characterized by a deficiency of the autonomic nervous system and particularly of its sympathetic division. Experiments of Pfister [16] on schizophrenic patients, and direct clinical observations (Singer [17]) seem to confirm this conclusion. I therefore come to the conclusion that schizophrenia involves a hypofunction of the sympathetic system and that improvement or cure may be brought about by a sufficient stimulation of the sympathetic centers. My own experiments, with a combination of hypoglycemia and inhalation of an oxygen deficient gas mixture, have shown that a very marked stimulation of the sympathetic nervous system may be produced in this way. The reduction in oxidative metabolism achieved is far greater in the brain than in other organs, since the brain oxidizes carbohydrates almost exclusively, whereas other organs can oxidize noncarbohydrate material when the blood sugar concentration is low.[18]

It will be the task of clinical experimentation to determine the most favorable conditions for the practical application of this combination. It may be stated, however, that the effect of this or any other procedure, according to this theory, depends on the degree and duration of the excitation of the sympathetic centers. Whether the alteration in oxidative metabolism is of specific importance remains to be seen. At any rate, if the interpretation given is correct, the therapy of schizophrenia will be guided in the future not by empiric observations but by a definite physiologic theory and by experiments designed to find the most suitable and effective procedure for the excitation of the sympathetic centers. It seems that physiologic research has opened up a new and promising road to combat not only schizophrenia but also other psychoses, such as the manic-depressive psychoses, in which vegetative disturbances are very prominent. Work along these lines is in progress.

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A TRICHINOSIS EPIDEMIC OF SIXTY-FOUR CASES

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An epidemic of trichinosis occurred in the 1136th Company Civilian Conservation Corps at Camp Charles M. Smith, Waterbury, Vt., during October 1937. Forty-four patients were admitted to the Station Hospital, Fort Ethan Allen, Vt., for treatment, after a variable period of observation in the camp dispensary at Waterbury.

The first patient, enrollee A, was admitted to the camp dispensary on October 30, complaining of headache, chills and general malaise, acute coryza, severe sore throat, swollen and painful eyes and muscular soreness. He was observed at the camp dispensary from October 30 until November 5, when he was transferred to the Station Hospital, with a diagnosis of moderately severe sinusitis, frontal, acute, suppurative and bilateral, the cause of which was undetermined.

On his admission to the Station Hospital his temperature was 103.2 F. There was edema of the upper eyelids and suborbital edema to such an extent that the patient's face looked swollen. The muscles of his extremities and back were painful to pressure, and he complained of a stiff, painful neck. He had slight sore throat and stated that he had had difficulty in swallowing fluids for the past three days. He said that his illness began about October 27. He gave a history of having had some epigastric discomfort, described as a feeling of constriction of the abdominal muscles of the epigastric area, which came with eating or drinking and lasted about five minutes. He had had frequent chills and sweats during his illness and had been unable to sleep. On the evening of the date of admission his temperature was 105 F. No change of diagnosis or tentative diagnosis was made on his admission.

On November 6 a blood count showed 27,750 white cells, and a differential count showed 1 per cent small mononuclears, 4 per cent large mononuclears, 61 per cent neutrophils and 34 per cent eosinophils. This great increase in the percentage of eosinophils, together with other symptoms, particularly muscular soreness, served to establish a diagnosis of trichinosis.

On November 9, procaine hydrochloride anesthesia being used, a small piece of the gastrocnemius muscle

was removed, and numerous trichinella spiralis parasites were found by microscopic examination.

The surgeon at Camp Smith was informed by telephone that a diagnosis of trichinosis had been made in the case of enrollee A. At that time Dr. Schulze, the camp surgeon, stated that he had admitted within the past two days patients with the same symptoms, who probably also had trichinosis.

On November 8 Dr. Schulze evacuated to the Station Hospital seven patients, all of whom had a fever, swollen eyes and muscular soreness. Later, as other enrollees reported at sick call, those with trichinosis were selected for transfer by their fever, swollen eyes, muscular soreness and eosinophilia. Four patients were transferred on November 9, nine on November 10, eleven on November 11, five on November 13, one on November 15, four on November 16, one on November 18 and one on November 23.

An epidemiologic study was immediately started at Camp Smith. Many of the enrollees who were ill with trichinosis had returned from Oregon on October 13, and because of that fact it was not necessary to go beyond that date. Pork had been eaten as follows: October 13, sausage meat (breakfast); October 16, salt pork (supper); October 17, sausage meat (breakfast); October 19, bacon (breakfast); October 19, chops (supper); October 23, salt pork (supper); October 24, sausage links (breakfast); October 27, roast loin (dinner); October 30, salt pork (supper), and October 31, roast cured ham (dinner).

The sausage meat on October 13 and 17 was furnished by the Camp Charles M. Smith Experimental Farm. All the other meat was furnished by well known packing houses under contract. All of the meat had been inspected locally by a veterinary officer assigned

Fig. 1.—Enrolle S, showing marked ecchymosis of the cornea and edema of the face and eyelids.

to that duty, and in addition meat products from the packing houses had been inspected by the Bureau of Animal Industry. Organization commanders and mess sergeants of the Civilian Conservation Corps are required to inspect carefully all meat products served, after cooking. They had done so in the case of the infested pork loin at dinner on October 27.

By questioning the enrollees and by examination of the company morning report and records, it was determined that the only meal at which all enrollees had been present and in whom trichinosis subsequently developed was on October 27, when a roast loin of pork was served, which many of the enrollees said was undercooked in the center.

This date and the source of the epidemic were somewhat confused because of the case of enrollee A, who was admitted to the camp dispensary on October 30 and to the Station Hospital on November 5. On his admission to the camp dispensary on October 30 his chief complaint was symptoms of disease of the upper respiratory tract, moderately severe acute coryza and severe pharyngitis, which required treatment.

Fig. 2.—Enrollee C. W., showing the characteristic drowsy appearance associated with trichinosis, edema of the upper eyelids, suborbital edema and swelling of the face.

On October 30, the day of admission, the medical officer attending him noted that he had some swelling of his upper eyelids, suborbital edema and inflammation of the conjunctiva. The respiratory symptoms continued to predominate, however, until November 3, by which time the coryza and pharyngitis had gradually improved but the elevation of temperature and particularly the pain around the eyes and the swelling of the eyelids remained. It can therefore be assumed that during the first part of his illness, which began on October 27, the patient was suffering from an acute infection of the respiratory tract and not from trichinosis, which supervened three days later. He had eaten the pork loin on October 27.

He had been detailed as a kitchen helper from October 1 and had assisted several times in preparing the pork and beans served. Each time he ate several cubes of the raw salt pork.

Enrollee A had clinically the most severe trichinosis in the epidemic. His biopsy showed an infestation of 800 larvae per gram of muscle. An incubation period of three days was assigned in his case.

It was important to determine the exact date on which the infested pork was eaten in order that a correct incubation period might be ascertained. The incubation period given in most textbooks is from one to forty days. No average is stated. It is fortunate that for this epidemic, caused by an infestation of intermediate extent, an average incubation period can be computed. For forty-four cases the average incubation period was twelve and four-tenths days, the minimum period was three days and the maximum period was twenty days.

Five quantitative biopsies were made, with the following results: enrollee A, weight 66.6 Kg., 800 larvae per gram; enrollee S, weight 61.4 Kg., 33 larvae per gram; enrollee J. T., weight 80.9 Kg., 8 larvae per gram; enrollee T., weight 68.4 Kg., 22 larvae per gram, and enrollee C. W., weight 64.8 Kg., 50 larvae per

gram. All biopsy specimens examined showed living larvae, with beginning encystment, December 10.

The number of larvae contained in the muscles of enrollee A was estimated. Assuming that half his body weight is muscle, he had a total of 26,640,000 living larvae in his muscles.

Dr. Maurice C. Hall and Dr. Benjamin J. Collins,[1] both of the Division of Zoology, National Institute of Health, United States Public Health Service, stated that in autopsies performed at hospitals in Washington, D. C., and Baltimore, on 300 persons who had died from causes other than trichinosis, forty-one diaphragms were seen to be infested with trichinellae. We have been informed [2] that examination of 1,000 diaphragms from autopsies at hospitals with a greater geographic distribution has shown this percentage to be increased, and it may be assumed that a great many persons have had trichinosis, either with or without symptoms.

With this information in mind and with the aid of a technical assistant, Dr. John Bozicevich, from the National Institute of Health, United States Public Health Service, we tested by the cutaneous and the precipitin method the forty-four patients with trichinosis in the Station Hospital and all CCC enrollees remaining on duty at the 1136th Company. Both tests were positive for all of the forty-four patients in the Station Hospital. At Camp Smith 136 enrollees still on duty in the 1136th Company were tested; twenty gave positive reactions to the cutaneous and the precipitin test. Seven of these twenty gave a history of no symptoms whatever; five had been under observation or treatment at the camp dispensary for trichinosis with a negative result and were permitted to return to duty; the eight remaining enrollees had had indefinite symptoms of a cold, with swollen conjunctiva and painful eyeballs, or had experienced muscular weakness or malaise for two or more days. At the time of examination, however, all were on duty and did not desire to go on sick report, since they felt entirely well.

In this examination fifty control subjects in the 1184th Company at Fort Ethan Allen, Vt., were tested, furnishing a corresponding social group of the same age and living conditions as those of the 1136th Company at Waterbury. Of these fifty, only two showed a mildly positive reaction to the cutaneous test and all gave a negative reaction to the precipitin test.

It may be mentioned that Dr. Bozicevich has spent considerable time in an attempt to refine the antigen used in the cutaneous test for trichinosis, and it now appears that his antigen is very satisfactory, a substantial contribution toward progress in the diagnosis of trichinosis.

As shown by the cutaneous and the precipitin tests, twenty cases of so-called ambulatory trichinosis at Camp Smith may be added to the forty-four cases in the Station Hospital, making a total of sixty-four cases in the epidemic. In other words, approximately one third of the patients in this epidemic were ambulatory.

Owing to careful selection and careful attention to hospitalization, the incidence of hospital cases is probably higher in the Civilian Conservation Corps than it would be in an epidemic in the civilian population, in which it can be assumed that about 50 per cent would remain ambulatory or semiambulatory during their illness. It is reasonable to assume that in future epidemics involving an infestation of intermediate extent, this ratio would obtain.

The forty-four patients now under treatment in the hospital have made satisfactory progress to date (Dec. 20, 1937). Their symptoms and further progress will be reported in a later paper. It has been possible to secure excellent clinical histories for the reason that, on October 1, six students from the University of Vermont were assigned to the Station Hospital for fourth year clinical work. The facilities of the University of Vermont have therefore been available for study of the cases, and the work is now being done. At a later date it is proposed to publish papers on the symptomatology and on a study of the eosinophilia and the blood chemistry in trichinosis.

From this report it is possible to draw certain conclusions regarding the prevention of trichinosis. Official meat inspection does not eliminate the possibility of infection. Education of the public to the danger of infection appears difficult. Much cooking is done in the kitchen by hired help who know little or nothing about trichinosis. An extensive campaign of education would serve to alarm people to the extent that they would refuse to eat pork at all. This fact does not preclude, however, mention of the reason for thorough cooking of pork whenever and wherever advice is given on general public health methods or measures.

The United States Public Health Service is of the opinion that garbage-fed hogs are responsible for the great prevalence of trichinae in pork at the present time, and Dr. Maurice C. Hall [3] stated that:

> Garbage-fed swine have trichinae between three and five times as frequently as do grain-fed swine and hence are specially important as sources of human trichinosis.
>
> Trichinosis in swine is apparently traceable to the eating of uncooked pork scraps in garbage, table scraps, swill and similar things, much more often than it is traceable to the eating of rats by swine.
>
> The garbage-feeding industry, as ordinarily carried on, is dangerous to the health of man and livestock, esthetically objectionable, and often economically unsound.

It appears therefore that a broad approach must be made to the problem of prevention of trichinosis, to include inspection of pork products by official sources, education of the public to the dangers of eating raw or uncooked pork and elimination of the garbage-feeding industry as now carried on.

SUMMARY

In this epidemic there were forty-four patients with trichinosis who required hospital treatment and twenty ambulatory patients with little or no sick record.

An average incubation period of twelve and four-tenths days was definitely established for the epidemic.

Five quantitative biopsies showed from 8 to 800 living larvae per gram of muscle.

A preliminary survey of work now being done on autopsy material by the National Institute of Health, United States Public Health Service, indicates that many individuals have become infested with trichina larvae.

The improved antigen demonstrated a dependable accuracy in the cutaneous tests of 180 persons concerned in the epidemic and fifty control subjects.

Preventive measures against trichinosis should include prevention of the disease in swine as well as in man.

1. Hall, M. C., and Collins, B. J.: Pub. Health Rep. **52**: 468-490 (April 16) 1937.
2. Personal communication to the authors from the National Institute of Health, United States Public Health Service.
3. Hall, M. C.: Pub. Health Rep. **52**: 873-886 (July 2) 1937.

Clinical Notes, Suggestions and New Instruments

MINUTE PERFORATION OF AN ARTERIOSCLEROTIC PLAQUE WITH RESULTANT RETROPERITONEAL HEMATOMA

V. EUGENE FRAZIER, M.D., KANSAS CITY, MO.

Recently while I was working on the staff of the Army and Navy General Hospital, a most perplexing case was admitted to the medical service, under my observation. Because of the inability of any of the staff to make a satisfactory diagnosis and because of the unusual condition found at postmortem examination I feel that this case is worthy of being reported. In my investigation of the literature that was available to me nowhere was I able to find the report of a like condition.

REPORT OF CASE

History.—W. C., a white man, aged 63, a resident of a small Arkansas town, was admitted to the hospital March 30, 1936. The diagnosis that was transmitted with the patient at the time of admission was (1) unresolved pneumonia of the left lower lobe, (2) acute constipation and (3) chronic arthritis. These diagnoses had presumably been made by the patient's family physician. The patient was a carpenter; however, since 1926 he had worked at only odd jobs. He had been in Florida from 1925 to 1929; otherwise he had spent all his life in a temperate climate. He was an occasional drinker and a constant pipe smoker. The past history included mumps during childhood, gonorrhea in 1902, progressive deafness for ten years and frequent attacks of malaria all during his life. The family history was irrelevant.

On admission the patient complained chiefly of pain in the back, anorexia and constipation. The soreness in the back was traced about ten years. The region involved was from the middorsal to the coccyx. The severity was such that a physician was frequently summoned and a "hypo" given for relief. Because of this circumstance the patient had forsaken his trade and resorted to such light tasks as he was able to find. The attacks would last for a month or more and were separated by an interval of several months. He stated that during this ten year period whenever he leaned over or attempted to lift anything he would always have a pain in the back and would feel too weak to complete the execution of the movement. The attacks had been of progressive severity, the one that occasioned this hospitalization having been the most severe of any to date, having appeared Feb. 15, 1936, and continued without remission until admission. During the present illness he had been constantly under the care of his family physician. There had been anorexia; vomiting was slight and constipation had been moderate. No other symptoms referable to the gastrointestinal tract were mentioned.

Physical Examination.—The patient was admitted on a litter, conscious and rational. The nutritional state and general health appeared fair; obviously, however, he was seriously ill and in great discomfort. He answered questions very slowly but rationally. He was reluctant to make any unnecessary movements or to indulge in any conversation. The estimated weight was 145 pounds (66 Kg.), the height 67 inches (170 cm.). The pupils reacted to light and to accommodation; hearing was defective; the teeth had all been removed; the tonsils were small and not noticeably infected. The skin and mucous membranes appeared normal for one of his age and habitus. There was no adenopathy; the thyroid was not palpable. Sclerosis of the temporal and radial arteries appeared normal for his age, or possibly somewhat increased. The blood pressure was 130 systolic, 90 diastolic. The cardiac rate and rhythm were considered normal, the apex impulse was not palpable, the heart was not enlarged to percussion and no murmurs were audible. The lungs were considered normal to inspection, palpation, percussion and auscultation. The abdomen was flat and there was slight rigidity. There was moderate tenderness over the entire upper half of the abdomen. In the center of the upper half of the abdomen there was a readily palpable mass which seemed hard and immobile; this measured about 20 cm. in diameter. The pulsations of the aorta were palpable with ease over the mass. Examination of the genito-urinary tract was considered negative. The prostate was considered to be of normal size and consistency. The reflexes were all normal, as were also the bones, joints and muscles.

Progress.—The patient was placed on a liquid diet and was given opiates in sufficient quantity to control the pain. After four days the condition had become worse, and intravenous infusion of saline and dextrose solution was given. At this time consultation was held with the surgical service, and immediate exploratory laparotomy was decided on, the consensus being that an abdominal aortic aneurysm would be found. A midline incision was made, and immediately on palpating a retroperitoneal tumor the surgeon announced the finding of an aneurysm. After palpation, each of the assistants concurred. Because of the condition of the patient the abdomen was closed without any further investigation being attempted. During the operation a transfusion of 500 cc. of citrated whole blood was given, and also lobeline and coramin were given. The postoperative course was uneventful but very slow, until the eleventh day, when the patient fell out of bed, thus tearing the upper half of the incision open. The condition continued to be poor, and gradually the patient became weaker. At times he was irrational and vomited occasionally; sometimes blood was seen in the vomitus. Fluids were taken freely, but no other food was given.

On the ninth postoperative day the dressings were blood stained and needed frequent changing; no improvement in this regard occurred. The temperature did not exceed 101 F. at any time during the hospitalization. April 21, on the eighteenth postoperative day, the patient died.

Laboratory Study.—The urine showed a trace of albumin and a few hyaline casts but otherwise it was normal. Examination of the feces was negative for blood and parasites. The blood count, March 30, showed: red blood cells 4,820,000, hemoglobin 95 per cent, white blood cells 12,800, lymphocytes 23 per cent, monocytes 1 per cent and neutrophils 76 per cent; April 13: red blood cells 4,220,000, hemoglobin 85 per cent, white blood cells 11,900, lymphocytes 27 per cent, monocytes 1 per cent and neutrophils 71 per cent; April 17: white blood cells 10,600, lymphocytes 14 per cent, monocytes 2 per cent and neutrophils 84 per cent. The bleeding time was four minutes, the coagulation time four and one-half minutes. The Wassermann and Kahn reactions were negative on two occasions. Analysis of the gastric contents revealed: total acidity 30/24/51; free acidity 0/10/20; occult blood positive/ negative/ negative/ negative/ positive.

X-Ray Study.—Owing to the weakened condition of the patient the x-ray examination was reduced to the minimum. In the hilus of the left lung there was an oval shadow of increased density which suggested the differentiation between tumor, aneurysm, paraspinal abscess and diverticulum. There was a gross defect of the pyloric portion of the stomach, and in this region peristalsis could not be demonstrated. The six hour examination showed partial retention, and the filling defect was again seen. The duodenum filled spontaneously and appeared normal. Films made to show the thoracic and lumbar spine were negative. The colon was not visualized. No other lesions were demonstrated.

Autopsy.—The coronary arteries appeared normal. The aortic arch and the upper part of the descending aorta appeared normal, with the exception of small scattered atheromatous plaques. Just above the diaphragm these became more numerous and of larger size, and as the celiac axis was reached the plaques became coalescent. Just below this point there was a minute rupture on the right side of the vessel, which was accompanied by a large hemorrhagic infiltration that was apparently slowly formed and seemed to have followed along the right renal artery into the perirenal fat. This had produced a large retroperitoneal hematoma, which had roughly the shape of a kidney and which measured 16 by 9 by 7 cm. The mass was tense and seemed to involve the fat and connective tissue. The kidney was enclosed within the hematoma, but no blood was found in the renal pelvis. Within the mass were old clots, which were in layers but not organized. The renal

capsule was intact and had not been penetrated by the hemorrhage. The renal artery was intact and appeared normal. Below the perforation the aorta appeared intact, but many of the sclerotic plaques were ulcerated. There was no free fluid in the abdominal cavity. The autopsy revealed no other significant lesions. Histologically the changes were typical of arteriosclerosis.

509 Chambers Building.

SUBCUTANEOUS RUPTURE OF THE JEJUNUM SUSTAINED IN A GAME OF FOOTBALL

W. H. ULRICH, M.D.; J. E. WEBSTER, M.D., AND C. FREMONT VALE, M.D., DETROIT

Catastrophic injuries incurred while playing football are not common. Christopher[1] in 1934 stated that rupture of the intestine due to sport injuries is apparently exceedingly rare. He reported one case at this time and noted the reports of three others by Nadler[2] and Kinzel.[3] In view of widespread football interest, it appears timely to point out the possibility of this type of accident and to report a case which came under our care.

The following is the report of a high school football player having a subcutaneous rupture of the jejunum, operated on twenty-five hours after sustaining the injury and making a recovery:

History.—G. C., a white youth, aged 19, was apparently kicked in the abdomen while engaged in tackling an opposing player. The kick was alleged to have taken place as the patient's abdomen met the moving foot of the opponent. Almost at the same time the patient fell forward, the abdomen hitting the ground rather violently, suggesting a second possibility for origin of the trauma. The injury occurred at 4 p. m. Oct. 13, 1936. The patient was breathless, his "wind having been knocked out." Going to the showers, after he regained his wind, he experienced cramplike abdominal pain. He vomited partially digested apples eaten just before practice. He was told to take a warm shower, which he did, obtaining complete relief from the abdominal pain. When he reached home he experienced similar cramping pains somewhat more severe and more continuous. Given peppermint drops, he immediately vomited; repetition produced the same result. The patient entered Receiving Hospital at 9 o'clock, five hours after the injury.

Examination.—The patient appeared healthy and was well developed and nourished. He was 5 feet 8 inches (173 cm.) tall and weighed 160 pounds (72.6 Kg.). He had a normal temperature and pulse on admission. He did not appear ill and had only moderate concern for his abdominal pain, insisting that it was improving. Careful examination of the head, chest, heart, back and extremities revealed no evidence of injury or intrinsic pathologic changes. The systolic blood pressure was 120, the diastolic 76. The abdomen, which was symmetrical in contour, presented marked tenderness limited to the hypogastrium and was associated with muscle spasm mainly of voluntary character. Rebound tenderness was not present. No distention or fluid could be elicited. The patient voided voluntarily. Laboratory studies revealed: urine normal, hemoglobin 13 Gm., color index 0.8, red blood cells 4,700,000, white blood cells 22,200 with 28 per cent nonfilaments, 66 per cent filaments and 6 per cent lymphocytes.

The impression at this time was that the patient had sustained an intra-abdominal accident and that prompt operation was imperative. This suggestion was met by stubborn refusal on the part of the patient and his father.

Preoperative Interval.—The patient slept fairly well during the night, awakening occasionally and complaining of moderate pain. At 6 a. m., October 14, he said that he was somewhat nauseated but wanted something to eat. Further attempts made to convince both the father and the patient that exploration was necessary were futile. The father was finally persuaded to call the family physician, who in turn emphasized the urgent need for operation. At 4 p. m., the patient vomited for the first time since hospitalization; pain increased, and with this unfavorable trend consent for operation was obtained. Examination of the abdomen at this time showed the tenderness to be in the epigastrium and the left upper quadrant. Rebound tenderness was present. Moderate involuntary rigidity was present in the upper portion of the abdomen. There was no distention. In this interval the patient's temperature had risen to 100.8 F. at 8 a. m., falling to 99 F. at 4 p. m. The pulse at 8 a. m. was 95 and at noon 130, falling to 90 just before operation.

Operation.—This was begun at 5 p. m. under gas-ether anesthesia, twenty-five hours after the accident. By means of a left rectus incision, the abdominal cavity was opened. A large quantity of turbid fluid escaped and by suction approximately 1,000 cc. of fluid was removed. Partially digested beans were present in the fluid. Large plaques of fibrinous exudate covered coils of small intestine in the upper left quadrant. Examination revealed that the stomach was intact. There was a longitudinal tear fully 2½ inches (6.4 cm.) long in the antimesenteric surface of the jejunum about 1 inch (2.5 cm.) below the ligament of Treitz. Closure was effected, reinforced by a Lembert suture. Further exploration revealed no other evidence of injury except a contusion to the transverse colon with subserosal hemorrhage. Drainage of the pelvis and lateral gutters were established by appropriate incisions and drains.

Postoperative Course.—The patient's immediate postoperative state was critical. The pulse rate rose to 160 and the temperature to 106 F. within the first twenty-four hours. Gradual improvement then occurred, marked by a steadily declining temperature and pulse rate, which reached normal on the eighth postoperative day. Normal for three days, the temperature then became irregular, reaching a maximum of 101 F., the result of an infection of the incision. On the twenty-first postoperative day signs and symptoms of a partial intestinal obstruction appeared. Conservative therapy by suction drainage of the stomach proved effective. Healing of the wound occurred by second intention, resulting in a prolonged hospital stay of forty-seven days and an incisional hernia. A gastro-intestinal series prior to discharge revealed no abnormalities.

The patient returned four months after discharge for the repair of the incisional hernia and made an uneventful recovery. He is now in excellent health.

1306 David Whitney Building.

From the Surgical Department, Wayne University School of Medicine.

1. Christopher, Frederick: Am. J. Surg. **25**: 341 (Aug.) 1934.
2. Nadler: Zentralbl. f. Chir. **57**: 2125 (Aug. 23) 1930.
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COMBINED EXTRA-UTERINE AND INTRA-UTERINE PREGNANCY

E. JOHN DOLAN, M.D., NEW YORK

This is the report of a case of combined extra-uterine and intra-uterine pregnancy which resulted in a living issue. Because this condition is comparatively rare and because it results in a full term child in only a small proportion, I feel justified in making this presentation.

Ectopic gestation occurs, according to Schumann,[1] once in 303 pregnancies. Parry,[2] in an early review, found in 500 ectopic gestations twenty-two that were complicated by a simultaneous intra-uterine conception. To date there have been approximately 300 of this type reported. How many of these progressed to a full term uterine delivery is hard to say, but in the thirty-four cases reported by Novak[3] twelve, or 35.3 per cent, were known to have resulted in a living child.

REPORT OF CASE

A white woman, aged 28, was brought into the Westchester Square Hospital by ambulance. There was nothing significant in the past history. A few hours before entrance she had a sudden severe pain in the left lower quadrant. There was no nausea or vomiting, nor were there any urinary complaints. She had had irregular menses during the past few months and ammenorrhea for the past six weeks, with some spotting two weeks before entrance.

The patient appeared acutely ill and pale but not in shock. She was alert and cooperative and the pulse was rapid but of good quality. Physical examination was essentially negative

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1. Schumann, E. A.: Extra-Uterine Pregnancy, New York, D. Appleton & Co., 1921.
2. Parry, J. S.: Extra-Uterine Pregnancy, Philadelphia, H. C. Lea, 1876.
3. Novak, Emil: Combined Intra-Uterine and Extra-Uterine Pregnancy, Surg., Gynec. & Obst. **43**: 26-37 (July) 1926.

except for rigidity and severe tenderness, with rebound tenderness in the left lower quadrant. Pelvic examination revealed a very tender cervix especially on motion. The cervix was soft. A tender palpable mass was felt on the left side. A diagnosis of ruptured ectopic pregnancy was made and operation was performed within a few hours.

When the abdomen was opened free blood was found in the peritoneal cavity. The left tube was ruptured and contained a two to three months fetus. The tube and the ovary were removed. The uterus showed enlargement and had the appearance of being pregnant. The abdomen was closed with a Penrose drain. The patient made an uneventful recovery and was discharged from the hospital twelve days after the operation.

The amenorrhea continued until the patient was again admitted to the hospital October 11 (six months and twenty days after operation), at which time she was delivered spontaneously of a full term normal child. The weight of the baby at birth was 8 pounds 3 ounces (3,714 Gm.). The postpartum course was normal and the patient was discharged ten days later. The child was normal in every way.

COMMENT

It is of interest to note that Parry was able to collect twenty-two cases of this condition reported before 1876. Later authors are of the opinion that the present rate of occurrence will increase with more widely applied scientific observation.

As Novak pointed out, most of these cases can be considered twin pregnancies. There are some on record, however, that are undoubted gestations superimposed on earlier ones. The case here reported appears to be of the twin pregnancy type.

The condition occurs largely in young women and in those with personal or family histories of multiple gestations.

The diagnosis is difficult, particularly in the earlier stages, as some cases are predominantly ectopic while others are predominantly uterine. In this case the menstrual history was very suggestive of the ectopic pregnancy. Even the enlarged uterus with softened cervix that was found might be an accompaniment of the tubal gestation.

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HEAT SENSITIVENESS ASSOCIATED WITH DERMATOSIS AND POLLEN ATOPY

EDWARD W. MISKALL, M.D., EAST LIVERPOOL, OHIO

History.—B. C., a white youth, aged 17, a student, consulted me March 25, 1936, complaining of a cutaneous eruption of the hands and fingers and attacks of generalized urticaria. The cutaneous lesions were first noticed simultaneously with symptoms of hay fever in June 1935, immediately after the patient had been pulling weeds. He attributed the symptoms to paint, which he had used that day, but avoidance of further contact with the paint had no effect on the symptoms, and various local treatments applied since had been equally ineffective. The hay fever subsided in the late summer, but the cutaneous lesions persisted. In January 1936 a severe attack of scarlet fever was followed by episodes of generalized urticaria, apparently consequent on exertion or on coming into a warm room. These attacks began with subjective sensation of heat and generalized flushing of the skin, followed in a few minutes by generalized wheals. Cold air brought immediate relief.

The parents stated that the patient was a "blue baby," had never been strong and had frequently complained of pains around the heart; also that he had had convulsions in childhood following applications of camphor and menthol ointments and after quinine by mouth. He had had measles, pertussis and chickenpox in childhood, diphtheria at 6, followed by cervical adenitis of six weeks' duration, and a tonsillectomy at 11.

No allergy, heart disease or tuberculosis was known to have occurred in the family.

Examination.—The patient was pale and asthenic, without cyanosis, edema or icterus. The temperature at 1 p. m. was 98.6 F., the blood pressure 122 systolic, 76 diastolic, his weight 125 pounds (56.7 Kg.) and his height 69½ inches (177 cm.). The nasal septum was deviated to the right, with partial obstruction. The heart and lungs were entirely normal. Nothing abnormal was noted on examination of the abdomen, genitalia, rectum, reflexes and lymph glands. An impetiginous dermatitis covered the hands and fingers. There was moderate dermographism.

The urinalysis and the blood count were entirely normal. There was no eosinophilia. The Wassermann and Kahn reactions were negative. The basal metabolic rate was 0 and plus 5 per cent on consecutive days.

Patch tests with camphor and menthol (1 per cent in oil), body paint and Japanese dryer (10 per cent in oil), allergenic oils of orchard grass, sweet vernal grass and timothy were negative. A test with crushed leaf of timothy, as suggested by Dr. Coca,[1] could not be carried out. Scratch tests with quinine hydrochloride 1 per cent in water and with quinine sulfate 1:40 in glycerin [2] were negative; with timothy, orchard, sweet vernal and June grasses, 4 plus. Temperature tests: A square of gauze wrung out of hot water and applied to the forearm produced in five minutes localized marked erythema and urticaria. Immersing the forearm in water at 100 F. produced in seven minutes localized urticaria, which disappeared quickly in cold water. Room temperature of 80 F. produced generalized urticaria, as did vigorous exercise. Ice applied to the skin was without effect. Orally, quinine sulfate and quinidine, 0.3 Gm. each, were without ill effect. The patient declined further allergic studies.

Treatments.—Intensive preseasonal desensitization to offending pollens was followed by a mild attack of hay fever in 1936. Local treatments were applied to the hands as follows: boric acid soaks, an ointment of tar, mercury and Burow's solution, treatments of one-fourth unit of unfiltered x-rays, 2 milliamperes, 6 inch spark gap, 8 inch distance, forty-five seconds. Heat sensitiveness was treated by graduated exercises and by baths beginning with thirty seconds at 65 F. and increasing daily in time and temperature until thirty minutes at 90 F. produced no urticaria. By midsummer urticarial attacks were rare and very mild, but the dermatosis was only slightly improved. The patient was not observed in 1937.

COMMENT

It may be doubted that the dermatitis in this case was due to pollen, since it did not show seasonal variation and patch tests were negative. There was no opportunity for further patch testing with the crushed leaves of the suspected plants. Brown, Milford and Coca [3] place pollen dermatitis in the class of contact dermatitides, with a basis in sensitivity comparable to ivy, sumac or primrose sensitiveness. They feel that it is not confined to persons subject to atopic hereditary influence but occurs in nonatopic persons as well. Grass dermatitis (spring group) is much rarer than ragweed dermatitis. Various dermatoses are recorded as being associated with physical allergy,[4] but in the case here reported the dermatosis preceded the urticaria by six months, the latter following immediately on scarlet fever. Several of Duke's [4] cases of heat sensitiveness followed acute febrile illnesses. Whether a relationship exists in this case between the dermatosis and the heat sensitiveness is doubtful. C. H. Rowe [5] holds that heat sensitiveness is an unusual manifestation of food allergy. George Piness [5] is not in accord and maintains a nonallergic explanation of heat sensitiveness. Urbach and Fasal [6] reject the term physical allergy for the great majority of cases and suggest the term vasoneuropathy of physical origin. They think it not improbable that successful desensitization will be found to be of the nature of a nonspecific hypo-ergy rather than a phenomenon of specific allergic immunity.

Little Building.

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STRYCHNINE POISONING SUCCESSFULLY TREATED WITH SODIUM AMYTAL

REPORT OF TWO CASES

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Strychnine poisoning is a common cause of suicidal and accidental death. It appeals to one contemplating suicide because of its cheapness, accessibility and small lethal dosage. Sugar coated strychnine tablets intended for adult medication tempt children. About one third of the accidental deaths from 1926 to 1928 in children under 5 years of age insured by the Metropolitan Life Insurance Company were caused by strychnine.[1]

Many antidotes for strychnine poisoning have been suggested. One group of authors list twenty-six.[2] These include inhalation anesthetics, stimulants, vasodilators, sedatives and even bleeding. Emetics have also been used.[3] Not one of these methods is specific, many are ineffective and few can be accurately controlled.

In 1929 Zerfas and McCallum[4] reported three cases of strychnine poisoning in human beings successfully treated with barbiturates. Lundy[5] commented on the successful use of barbiturates in strychnine poisoning in 1931. I have found more recent reports of eleven cases in which treatment with sodium amytal was successful, and three cases in which other barbiturates were successfully used.[6] There probably are others.

Because so few reports were found I thought that an account of two more patients successfully treated with sodium amytal might be of interest.

The physiology of the protective action of barbiturates against strychnine poisoning has been studied in animals by several investigators.[7] Various barbiturates have been shown to act as antidotes against strychnine in unanesthetized rats and rabbits. Swanson[8] showed that "sodium amytal by vein in small repeated doses antidotes 20, 25, 30 and up to 35 times the subcutaneous minimum lethal dose of strychnine sulfate in rabbits."

REPORT OF CASES

CASE 1.—W. M., a white man, aged 60, a farmer, became despondent over family affairs. At about 7:30 p. m., May 7, 1935, he mixed approximately 15 Gm. (230 grains) of strychnine sulfate with water and drank it. He had just eaten his supper. He became extremely nauseated and vomited the meal and probably part of the strychnine. At 9 o'clock when I examined the patient he was in opisthotonos with all skeletal muscles contracted. When the muscles relaxed momentarily he told me that I could do him no good—that all was over. He was given 0.5 Gm. (7½ grains) of sodium amytal intravenously. The muscles relaxed a few moments later and by 9:15 he was sound asleep.

My attention was then called to the patient's dog, which had been seen eating the vomitus in the yard and was now lying rigid. I gave him 0.5 Gm. (7½ grains) of sodium amytal intraperitoneally and the muscles relaxed almost immediately and he ran off.

The patient was brought to the hospital. About midnight the muscles became spastic again. The dose of sodium amytal was repeated. The patient slept all night and had no more spasms. In the morning he said that his body felt as if he had been beaten.

The dog did not fare as well as his master and was found dead the next morning. His posture suggested that he died in a strychnine convulsion.

CASE 2.—G. H., a white man, aged 56, a farmer, was brought to probate court May 15, 1937, for examination prior to commitment to a state hospital for inebriates. About fifteen minutes had elapsed from the time the sheriff took him from his farm until he reached court. As he entered the courtroom his legs became spastic. He said that he had taken poison when he saw the sheriff approach his farm. He refused to say what poison he had taken.

Because of the spasticity the poison was thought to be strychnine and the man was removed to the hospital quickly, where 0.5 Gm. (7½ grains) of sodium amytal was injected intravenously. He slept ten minutes, then awakened. Tetany returned in a few moments. Complete rigidity of the legs could be elicited by a very slight jar of the bed. The dose of sodium amytal was repeated and the stomach was lavaged. The patient awakened in one hour with hyperactive reflexes. These gradually diminished and the patient slept. Fourteen hours later he awakened. His reflexes were still hyperactive but no other evidence of poisoning was present.

A specimen of the coffee with which the poison had been mixed was examined and was found to contain strychnine.[9]

Worthington Clinic.

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EAR PHENOMENON IN LESIONS OF THE SYMPATHETIC NERVE

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Lesions of the sympathetic nerve in the cervical region or in the medulla oblongata cause among other pathologic features a typical triad known as the Horner or Horner-Bernard syndrome: narrowing of the palpebral aperture, myosis and enophthalmos, all on the side of the lesion. The narrowing of the palpebral aperture is due to paralysis of the tarsal muscle, which participates in the closure of the eye; myosis is due to paralysis of the dilator of the pupil, and the enophthalmos to paralysis of the orbital muscle of Müller. In addition, one may observe protrusion of the pinna of the ear on the side of the lesion.

When one compares the two ears in a patient who has a lesion of the cervical sympathetic, it is easy to notice that on the healthy side the distance between the pinna of the ear and the mastoid is smaller than on the affected side and that the ear is somewhat drawn backward. It can be noticed by the examiner either by facing the ears or by comparing them from behind. This phenomenon has been observed by me for many years in lesions of the lateral or retro-olivary region of the medulla, which is nourished by the posterior inferior cerebellar artery.

This area contains pathways conducting the sensations of pain and temperature for the ipsilateral side of the face (descending root fibers of the trigeminal nerve) and the contralateral side of the body (the lateral spinothalamic tract). The crossed dissociated sensory disturbances and the Horner syndrome form the main features of what is known as Wallenberg's syndrome of occlusion of the posterior inferior cerebellar artery. However, other lesions of the retro-olivary area—inflammatory or traumatic—of the medulla may also produce some features of this syndrome, which is unquestionably due to involvement of the sympathetic nerve fibers, whether outside or within the medulla. This has been demonstrated by Langley

and Sherrington[1] in monkeys. By electrical stimulation of the upper end of the divided cervical sympathetic nerve they produced, among other phenomena, a slight drawing backward of the pinna of the ear, so that it lay closer to the mastoid region and projected less from the side of the head. On the other hand, mere sectioning of the sympathetic nerve of monkeys caused constriction of the pupil, narrowing of the palpebral aperture, chiefly by drooping of the upper eyelid, but partly by raising the lower, and projection of the pinna from the side of the head. The clinical observations fully bear out the correctness of the physiologic observations, and it would be proper to call the ear phenomenon here described "Langley-Sherrington sign."

Research Hospital.

Special Article

OTHER FACTORS

LESS WELL KNOWN VITAMINS

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ITHACA, N. Y.

This article and others recently published or to be published comprise a new series on the present status of our knowledge of the vitamins. They have been prepared under the general auspices of the Council on Pharmacy and Chemistry and the Council on Foods. The opinions expressed are those of the authors and not necessarily the opinions of either council. Reprints are not available but the articles will be published later in book form.—ED.

Under the title of "Other Factors" one can include only a few of the many essential organic substances that various animal species seem unable to synthesize. The description of these substances is scattered throughout the vast literature of biology. Many more have probably been missed than have been found. Such substances may seem of little importance at this time, but who can say when the needs of some insect with specific requirements may provide the key for studying the vitamin physiology of higher species? These ramifications of nutrition are well illustrated by the discovery of Trager and co-workers that a factor essential for growth of mosquito larvae is present in normal human urine but deficient in that of pernicious anemia patients.

To appreciate the expanse of unexplored fields in the domain of nutrition, one need merely read some modern work such as "Culture Methods for Invertebrate Animals" by Needham.[1] All recent tests with insects indicate that they require special factors that have not been described thus far as essential for higher forms. Today one can only postulate that, as higher forms such as man lost their fins and acquired hands in the course of evolution, they also abandoned some of their primitive vitamin needs and acquired still others.

A detailed discussion of insect nutrition is not appropriate in this paper, but passing consideration is worth while. Some of the most primitive of insects, such as the common cockroach, require constituents of yeast such as the vitamin B fractions as well as other factors which still remain undescribed.[2] Crowell and McCay[3] found that even clothes moths require some of the fractions of yeast. No clear-cut evidence has ever appeared, on the other hand, which indicates that any insect species requires either vitamin A or D, although certain lipid materials, possibly sterols, seem essential to such forms as the cockroach. As the insect field is explored further it is likely that needs for the fat soluble vitamins may appear.

Trager,[4] in discussing the nutrition of mosquito larvae, concluded that there must be certain compounds other than the recognized vitamins that are essential. Frost and others found that mosquito larvae need certain essentials in yeast but not vitamin A, B, C, D or E. Fortunately, students of insect nutrition have recognized the limitations in the alphabet and have not attempted to label their discoveries with letters and subscripts. Such consideration for the future of the science of nutrition, however, must not be rewarded by neglect of their discoveries.

If one considers still lower forms than insects, one must enter the field of bacterial nutrition, where other parts of the alphabet, such as V and X, have been used to describe specific factors. Knight[5] has provided an excellent summary of the nutrition of bacteria with considerable space devoted to vitamin factors. The possible usefulness of even the molds in assaying the vitamins is forecast in the recent study of Meiklejohn.[6]

The minute amount of growth stimulants with which the nutrition student of the future will have to be concerned is suggested in the recent studies of Kögl,[7] who has isolated a factor for yeast which acts in a concentration of one part in four hundred billion. The comparative activity of some new and old compounds are shown in the accompanying table, from Kögl.

Little attention has been devoted to invertebrates other than the insects. However, Wulzen[8] and her associates have devoted many years to the study of planaria. In her earliest studies Wulzen recognized that she was dealing with specific thermolabile substances that differ from the vitamins previously described. In recent attempts to isolate these factors, Greenberg and Schmidt[9] have concluded that they can be extracted from liver by ether but that they are not identical with either the phosphatids or the nonsaponifiable lipids. Bahrs[10] has found marked differences in the growth promoting power of the rabbit's intestine when fed to planaria, depending on such factors as age and diet of the rabbit. This opens a fertile field of investigation, planaria being used to assay tissues of higher forms.

Comparative Activity of Several Compounds

Material	Organism	Dilution	Effect
Biotin	Yeast	1:400,000,000,000	Growth
Biotin	Yeast	1: 40,000,000,000	Growth
Auxin A	Carrot	1: 10,000,000,000	Retardation
Auxin A	Oats	1: 1,000,000,000	Curvature
Thyroxine	Tadpole	1: 5,000,000,000	Metamorphosis
Epinephrine	Frog's eye	1: 20,000,000	Expansion

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FACTOR H

The lower vertebrates, with the exception of fish, have been given little attention by students of nutrition. For the past period of nearly a century during which trout have been domesticated, it has been known that the various species require some factor present in fresh meat. After a series of studies in which trout were fed synthetic diets of purified constituents supplemented with yeast, tomato juice and cod liver oil, McCay, Bing and Dilley [11] found that trout could not live unless fed a small amount of fresh meat. This component was termed "factor H." In a series of later studies it was found to be thermolabile and readily destroyed in the course of ordinary drying. However, part of it was preserved when such sources as liver were dried in vacuo in inert gas. This substance is present in all fresh body tissues that have been studied. It seems to be the dominant factor in the nutrition of trout. The literature concerning this factor has been reviewed recently.[12] This factor seems to be essential for carnivorous species such as the fox and the mink. In many respects factor H resembles the thermolabile substance that Wulzen has found essential for planaria.

The letter H has also been applied to a totally different substance, which Booher [13] finds essential for rats. This factor is said to be heat stable but destroyed by alkali. She finds it essential for growth of the rat. Its relation to the similar factors postulated by others has been discussed in earlier chapters.

The term "vitamin H" has also been used at times by Paul György [14] to describe one of the fractions concerned in rat dermatitis. A recent German work has included an entire section under the heading of "vitamin H." [15] In this summary Stepp and his co-authors define H as the dialyzable, heat stable substance which is set free from liver proteins by digestions and proteolytic enzymes, according to the observations of György. They assume that this essential is needed by the rat, the chicken and man. There seems little justification for including all these diverse discoveries under this common name. Furthermore, one wonders why the term H should be used to describe the growth factor of Williams, Lewis or Hunt. Apparently the Germans are already marketing some preparations supposed to be concentrates of this factor under the names "Huco Salve" and "Murmil."

MISCELLANEOUS GROWTH FACTORS

The literature dealing with lower forms of life teems with unnamed and ill defined vitamins. There are fewer such factors described for the vertebrates that are popular with orthodox students of nutrition; namely, the rat and the chicken. Since most of these have been considered in other papers in this series, only brief mention of them need be made here.

The growth factor for chicks described by Arnold and his associates [16] has proved to be the amino acid arginine, thus accounting for the growth stimulation by such products as peanut meal, liver residue and soy bean meal.

In 1931 Guha [17] found that there were certain factors in milk, grass, spinach and egg yolk that stimulated the growth of rats fed B fractions in the form of vitamin B_1 and autoclaved marmite. To preserve these fractions he found it essential to dry the products at 35 C. in front of a fan. The potency of these materials was lost in both fractions through extraction with ether.

Hogan and his co-workers [18] have shown the need of herbivorous species for some factor that is present in plant juice or alfalfa. During the past two years, evidence has also accumulated in the Animal Nutrition Laboratory at Cornell that lambs require some factor, other than the recognized vitamins, that is present in freshly sprouted oats. Kohler and his co-workers [19] noted the growth stimulating properties of grass juice.

In 1929 Coward and her associates [20] found that some factor was contained in certain preparations of casein and was deficient in others. When a particular sample of casein proved deficient it could be supplemented satisfactorily by milk, lettuce, liver or wheat embryo. These studies were made with rats in the course of other assays.

Liver has provided a fertile source of growth stimulants. It has long been recognized that the essential constituent for brook trout, factor H, is richest in beef liver. Likewise the vitamin requirements of such lower forms as planaria are completely satisfied by liver. The past ten years has indicated that liver has several essential factors, and there is little doubt that many will be discovered as new species are considered by students of nutrition.

In 1932 Mapson [21] postulated the existence of a growth factor in liver. It was soluble in 90 per cent alcohol and also in water after the liver was subjected to digestion with papain. This factor was named "physin." Seegers and his co-workers [22] also found that liver contained a growth factor. This tended to be lost on heating. Liver heated at 100 C. for two weeks lost this capacity to stimulate the growth of rats, although the biologic value remained unchanged as far as the protein was concerned.

Elvehjem and his associates [23] have postulated several new factors. Among them is included one for stimulating the growth of rats. They found this in the alcohol-ether precipitate from water extract of hog's liver. They find this is heat labile, so it falls among the thermolabile B factors and needs no further discussion here, other than to note it with the other factors of liver. This factor has recently been christened W by Frost and Elvehjem.[24]

Halliday and Evans [25] attempted to confirm these observations of Elvehjem and his co-workers but came to the conclusion that the precipitate from hog's liver

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was carrying down vitamin B_6. Therefore they decided that there was inadequate evidence to postulate such a new factor.

The "Y factor" described by Chick and Copping [26] also is found in liver as well as in yeast and its water extracts. This factor is one of the B fractions needed for growth by the rat. Its nature is gradually becoming clear in the course of such thorough studies as those of Edgar and Macrae.[27] These authors find another factor adsorbed on fullers' earth which is neither vitamin B_6 nor riboflavin.

Among the liver extracts must also be included the filtrate factor of Lepkovsky and Jukes,[28] which seems potent in curing dermatitis in chicks, blacktongue in dogs and pellagra in man. This may be identical with the "Y factor," already described, and nicotinic acid, to be discussed later.

In order to rear chickens on synthetic diets, Hogan and his co-workers [29] had to supplement the basal diet with wheat germ oil, acid hydrolyzed yeast, tikitiki and liver extract in addition to carotene and irradiated ergosterol. One can only speculate concerning the undiscovered factors in such an array of supplements.

In 1928 Hunt [30] discovered that there were at least three factors in yeast that were essential for the growth of the rat.

In the course of growth studies with rats, Williams and Lewis [31] also found a factor left in yeast residues after extraction with water and alcohol. This growth factor could not be extracted with any solvent. No later work indicates its relation to the new B fractions.

Vitamin I, or B_7, is the factor postulated by Centanni.[32] He found that an alcoholic extract of rice polishings prevented digestive disturbances in pigeons but did not prevent the symptoms of polyneuritis. Methyl alcohol was the best solvent among the alcohols. Ethyl alcohol was effective at from 95 to 100 per cent but extracted only part of this factor at a 70 per cent concentration.

This I factor recalls the claims of Rosedale [33] made ten years ago. At that time he precipitated the water extract of rice polishings with lead acetate and carried down a factor that permitted evacuation of the bowels and checked the constipation associated with polyneuritis in birds.

This also recalls the factor of Carter.[34] He found that the heart rate slowed down when pigeons were fed polished rice but that recovery was much slower from feeding B_1 than from such feedstuffs as yeast and wheat. All these factors are difficult to evaluate, since polished rice is such an unbalanced diet in many respects.

Factor J is the term applied by von Euler and Malmberg [35] to a substance found in fruit, especially St. John's berries. This factor seems to cure pneumonia in guinea pigs, while cevitamic acid will not.

VITAMIN K AND OTHER BLOOD CLOTTING FACTORS

Vitamin K is a specific fat soluble substance the absence of which in the diet of chickens causes the blood to become very slow in clotting. Thus far no evidence has indicated its importance for other species, although attempts to study the requirements of other species have been very limited.

The observations that led to this discovery were made by Dam [36] while attempting to determine whether hens could synthesize cholesterol. At this time he was feeding a synthetic diet composed of casein, starch, salt, marmite, filter paper and cod liver oil. In earlier studies, using a similar diet, he had observed subcutaneous and intramuscular hemorrhages as well as erosion of the gizzard. He had also noted that these chickens were anemic and that the number of erythrocytes was only about two million instead of three or more. In 1930 Horvath [37] also observed that the coagulation of the blood of chickens was accelerated by diets of sprouted soy beans.

The same hemorrhagic condition described by Dam was reported by McFarlane and his associates [38] in 1931 when they were attempting to establish the need of chickens for fat soluble vitamins. These workers were employing diets of about 70 per cent rice and 15 per cent marmite supplemented with various protein sources such as fish meal and casein. They suffered heavy losses from hemorrhage in chickens fed on a diet containing ether extracted fish meal but no losses if the fish meal was not extracted. Further, they found that blood from chickens fed this extracted fish meal could set in the laboratory over night without clotting.

In 1934 Dam and Schønheyder [39] found that this disease, which resembled scurvy in some respects, developed if chicks were fed cereals but that otherwise it developed even if the diet contained 15 per cent yeast. Neither lemon juice nor cevitamic acid alleviated the symptoms.

In the course of further studies it was found that the fats of hog's liver and hemp seed were rich in the factor while the fats from rye, sunflower, corn and rice had no effect. Cod liver oil was also without effect.

Dam and his co-workers [40] later found that the normal amount of prothrombin was lacking in chickens fed a diet deficient in vitamin K. The condition could be developed in about three weeks on a diet of casein 10, ether extracted pig's liver 10, dried yeast 15, sucrose 62.3, salt mixture 2.7 and cod liver oil 4. Three days after vitamin K is fed to deficient animals the blood becomes normal.

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Rats and guinea pigs were fed a diet similar to that used for the chickens but no symptoms developed. A man suffering from hemophilia also yielded no response to the feeding of concentrates of the vitamin.

The factor was concentrated by Almquist [41] in 1936 so that 2 mg. formed a sufficient supplement for 1 Kg. of feed. This concentrate was prepared from a hexane extract of alfalfa. By distillation this material was concentrated still further. Under very low pressures the potent material could be distilled at from 120 to 140 C. This vitamin is unstable to alcoholic alkali and is unsaturated as well as colorless. It has no sulfur or phosphorus but a small amount of nitrogen. Color tests indicate an indole nucleus.

This vitamin seems to be synthesized by bacterial action, since its amount tends to increase in feedstuffs subjected to such action. The amount also increases in the feces of chicks on the deficient diet if these stand for a day. The diet of the hen may also influence the development of the disease in chicks.

About 1931 claims were made that vitamin A was concerned with the clotting of blood. As purer preparations became available, however, this was disproved. Recently, however, Schiff and Hirschberger [42] have found that there is some factor, which they term T, in egg yolk and sesame oil. This seems to increase the platelet count in both human and rat blood. They found that from five to ten drops of sesame oil per day or five egg yolks affords ample of this essential for treating children. It has also been claimed that semi-fasting dogs develop a severe thrombopenia and need this essential. Evidence is not clear that factor T and vitamin K are related.

The failure of blood to coagulate in "sweet clover disease" has long been recognized, especially in young cattle that have consumed partly spoiled clover.[43] Quick [44] finds that this disease can be reproduced in rabbits. It is cured by feeding alfalfa. However, this disease is not related to the vitamin other than that alfalfa probably acts in furnishing materials for the synthesis of prothrombin. Hogan [18] also observed that the ether extract of alfalfa prevented the hemorrhages of the nursing young in the case of rabbits.

It is well known that some fish meals are injurious to animals. Scott and Cook [45] find that this injury is due both to the deficiency of vitamin K and to toxic factors in the fish meal. The toxic factor is chiefly reflected in the distorted blood picture with marked increase in lymphocytes and leukocytes.

GIZZARD EROSION FACTOR

The erosion of the gizzard was observed early in the studies of Dam. The question of whether or not this is due to a specific deficiency is still unsettled. Almquist and Stokstad [46] found that it was cured by a saponifiable fraction of the hexane extract of alfalfa or dried kale. Cod liver oil, wheat germ oil, orange oil, egg yolk and alfalfa ash failed.

Bird and his associates [47] seemed to feel that the factor was specific but its properties, as far as solvents are concerned, conflicted with those found by Almquist. Thus the Wisconsin workers found the factor in such materials as pork lungs, liver and kidneys but they were not able to extract it with water, alcohol or ether. They found it to be labile to both dry heat and autoclaving at 120 C. Among the grains they found oats the best. In their hands alfalfa was not potent. Further studies will undoubtedly be needed to determine whether this is a specific factor.

VITAMIN P

Vitamin P is the term applied by Rusznyák and Szent-Györgyi [48] to a substance that occurs in lemon juice and red peppers. In certain pathologic conditions characterized by increased permeability of the capillary wall, they found injection of concentrates to be effective when cevitamic acid failed. The early work indicated that the effective agent belonged to the vegetable dyes of the flavine group.

Workers from the same laboratory used guinea pigs that were fed a diet to produce scurvy. They found that these animals finally died of scurvy if fed the concentrate of vitamin P termed "citrin." However, these animals lived for about forty-four days, while the others lived only twenty-eight days.

In a later study Bruckner and Szent-Györgyi [49] found citrin to be a mixture of hesperidine and eriodictyol glucoside and ascribed the activity and color to the latter. In unripe oranges they found much hesperidine but not much of the other compound.

The existence of this "vitamin P" has been questioned by Zilva.[50] He presents evidence which, as far as the experiments on guinea pigs are concerned, indicates that there is no reason for postulating a new factor. His work seems to show that the animals were suffering from vitamin C deficiency, which was relieved to a slight extent by contamination of the "citrin."

NICOTINIC ACID

From time to time nicotinic acid returns among the growth stimulants that resemble vitamins. Thus the Funks [51] have presented evidence recently that the growth of rats and pigeons is stimulated by such derivatives. This work is interesting in the light of the need of staphylococcus for the same essential as a supplement to B_1 as reviewed by Kögl.[7] Furthermore Elvehjem and his co-workers [52] have found that nicotinic acid will cure blacktongue in dogs. These workers have isolated considerable amounts of crystalline nicotine amide from active liver fractions. The effectiveness of this compound in the treatment of human pellagra has now been established and is discussed elsewhere.

TOXIC SUBSTANCES

The specific toxicities of various foodstuffs and the counter action of other vitamin-like components of the

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51. Funk, Casimir, and Funk, I. C.: The Value of Pyridine Derivatives in Nutrition, Proc. Soc. Biol. Chemists **31:** 35, 1937.

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diet cannot be neglected in a discussion of vitamins, although the subject material is too extensive for detailed consideration here. Throughout the literature on nutrition one is confronted from time to time with reports of toxicities from natural feedstuffs, especially when they are fed in certain mixtures. A few of the products that can be recalled readily are linseed meal, cottonseed meal, wheat, corn, oats, clover, fish, fish liver oils and egg white. Even in the case of such a familiar product as linseed meal, in which the evidence is quite clear that a glucoside is the toxic agent, one who reviews the literature critically is aware of the many discrepancies involved. When one undertakes to analyze the various factors that interplay to protect or poison an animal with the cyanides from such products, the problem becomes more complex.

In recent years definite advances have been made in studying the neutralization of food toxins by vitamin-like substances in only a few cases.

In 1916 Bateman noted the toxicity of large amounts of egg white and the loss of this property after heating, acid denaturation and proteolytic digestion, according to Stepp and his associates.[15] In 1927 Boas [53] found that rats suffered from dermatitis when the protein of the diet was supplied by certain forms of dried egg white. However, she learned that this disease could be cured if the wheat starch in the diet was replaced by potato starch. At the end of her first study she was uncertain whether she was dealing with a vitamin deficiency or a toxicity. Later she seemed to lean to a toxicity theory.

Parsons and her associates [54] have given special attention to this problem in recent years. They find that the toxicity of dried but uncoagulated egg white is rendered innocuous either by cooking, as observed by Boas, or by feeding substances such as dried yeast or dried liver. Furthermore, these workers report that the neutralizing factor is found in the organs of different species in different amounts. Human liver varies in its concentration of the factor while turkey liver is very rich.

The toxicity of fish liver oils is another field that has been studied during the past ten years. To Agduhr [55] must be given the credit for recognizing clearly that cod liver oil contained some factor that caused the degeneration of muscle tissue in herbivora. He also recognized from the beginning that this toxic factor of cod liver oil interplayed with other constituents of the diet. The ability of alfalfa to counteract partly this toxic property was recognized by Woodward and McCay.[56] Madsen and his co-workers [57] also found that this toxicity interplayed with the remainder of the diet. However, no diet was devised that would do more than delay the development of the degenerative changes. Later Madsen [58] found that cottonseed oil would partly counteract this toxic factor of cod liver oil. Even in rats Norris and Church [59] found that yeast and cod liver oil interplayed in the diet. Instead of a sparing action on the B requirements by the fat of cod liver oil, they found that they must increase these B factors to obtain normal growth. This finding is especially interesting, since the rat is so immune to most food toxins compared to such species as guinea pigs. Recently Yamamoto [60] extended this study of the interplay between yeast and the toxic factors of cod liver oil.

This toxic factor of cod liver oil in the case of herbivora is shown in two ways: first, in degenerative changes in tissues and, second, in lowering the secretion of the milk fat by a lactating cow. Limited evidence indicates that the toxic factor is the same in the two cases, according to the observations of McCay and Maynard.[61] This factor is found in the saponifiable fraction and is probably an unsaturated compound, since hydrogenation of cod liver oil causes it to lose this toxic action. No explanation has been offered concerning the method by which such substances as alfalfa and yeast can react with an unsaturated fatty acid to remove its toxic action.

Hilditch and Thompson [62] have produced evidence indicating that the unsaturated fatty acids of the C_{20}-C_{22} series may account for part of the toxic action of cod liver oil. This is probably only part of the explanation, however, because salmon oil, which is rich in these same compounds, fails to produce the consistent effect of cod liver oil in lowering the secretion of milk fat. No mechanism has been devised to explain the interplay between dietary constituents in the case either of poisoning from egg white or of that from cod liver oil.

Finally a third field that has been given considerable attention in recent years is that concerned with the cerebellar disorder in chicks first discovered by Pappenheimer and Goettsch.[63] They found this to be produced in chicks fed a diet of milk powder, casein, starch, yeast, cod liver oil, salts and filter paper. In ducks fed a similar diet, injury to the muscles developed with no effect on the brain,[64] an observation of special interest because it shows that a science of nutrition cannot be grounded on one or two species such as the rat and the chicken. In later studies, vegetable oils, incorporated in the diet at 20 per cent levels, were found to afford complete protection in the case of chicks.[65]

Jungherr and Pappenheimer have found more recently that turkeys respond to this diet in a still different manner. This species develops selective necrosis of the smooth muscle of the gizzard wall.[66]

CONCLUSIONS

In such a review as this, which by its nature covers much of the vitamin literature that has not been amply confirmed, one must recognize that it will become obsolete in part, at least, by the time it is printed.

53. Boas, Mary Averil: The Effect of Desiccation upon the Nutritive Properties of Egg White, Biochem. J. **21:** 712, 1927. Fixsen, Margaret Averil Boas: The Effect of Desiccation upon the Nutritive Properties of Egg White, ibid. **25:** 596 (No. 2) 1931.

54. Parsons, Helen T., and Lease, Jane G.: Variations in the Potency of Certain Foodstuffs in the Cure of Dermatitis Induced in Rats by Dietary Egg White, J. Nutrition **8:** 57 (July) 1934. Parsons, Helen T.; Lease, Jane G., and Johnson, Doris: The Storage in the Body Organs of the Factor Protective Against the Injury Due to Dietary Egg White, Proc. Soc. Biol. Chemists **31:** 77, 1937.

55. Agduhr, Erid: Postnatal Development Under Different Conditions of Nutrition and Circumstances of Functioning: I. The Changes in the Heart Through the Presence of Cod Liver Oil in the Food, Acta pædiat. **5:** 319, 1926.

56. Woodward, J. W., and McCay, C. M.: Synthetic Diets for Herbivora, Proc. Soc. Exper. Biol. & Med. **30:** 241 (Nov.) 1932.

57. Madsen, L. L.; McCay, C. M., and Maynard, L. A.: Synthetic Diets for Herbivora with Special Reference to the Toxicity of Cod Liver Oil, Memoir 178, Cornell Univ., 1935.

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59. Norris, E. R., and Church, Anna E.: The Toxic Effect of Fish Liver Oil and the Action of Vitamin B, J. Biol. Chem. **89:** 437 (Nov.) 1930.

60. Yamamoto, I.: Toxicity of the Fish Liver Oil and the Antitoxic Effect of Yeast, Bull. Inst. Phys. Chem. Research **15:** 590, 1936.

61. McCay, C. M., and Maynard, L. A.: The Effect of Ingested Cod Liver Oil, Shark Liver Oil and Salmon Oil upon the Composition of the Blood and Milk of Lactating Cows, J. Biol. Chem. **109:** 29 (April) 1935.

62. Hilditch, T. P., and Thompson, H. M.: The Effect of Certain Ingested Fatty Oils upon the Composition of Milk Fat, Biochem. J. **30:** 677 (No. 4) 1936.

63. Pappenheimer, A. M., and Goettsch, Marianne: A Cerebellar Disorder in Chicks, Apparently of Nutritional Origin, J. Exper. Med. **53:** 11 (Jan.) 1931.

64. Pappenheimer, A. M., and Goettsch, Marianne: Nutritional Myopathy in Ducklings, J. Exper. Med. **59:** 35 (Jan.) 1934.

65. Pappenheimer, A. M., and Goettsch, Marianne: Protection Afforded by Certain Vegetable Oils Against Nutritional Encephalomalacia of Chicks, Proc. Soc. Exper. Biol. & Med. **31:** 777 (April) 1934.

66. Jungherr, E., and Pappenheimer, A. M.: Proc. Soc. Exper. Biol. & Med. **37:** 520-526, 1937.

However, certain trends are clear. The science of nutrition is slowly extending to include more animal species. Each species that is included leads to the discovery of new vitamin requirements and specific reactions to mixtures of feedstuff. However, this broadening of the base must lead to a more complete science capable of providing generalizations with more certainty. Finally the need for better systems of naming new vitamins is obvious. The biologist who feeds animals must inevitably precede the chemist in the discovery of new essentials. The isolation of new factors is slow because these factors depend on biologic testing as well as involved technics. For this reason it is likely that there will be an increasing accumulation of vitamins awaiting the organic chemist. A better system of numbering them must be devised to prevent confusion in the period between their discovery and their isolation. Possibly some numbering system issued from a central office such as that of the League of Nations must be resorted to in the near future.[67]

Council on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COUNCIL ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION AND WILL BE LISTED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED.

FRANKLIN C. BING, Secretary.

NUTRADIET SMALL WHOLE STRINGLESS BEANS PACKED IN WATER

Distributor.—The Nutradiet Company, a subsidiary of S & W Fine Foods, Inc., San Francisco.

Description.—Canned beans packed in water without added salt or sugar.

Manufacture.—Blue Lake Stringless beans are inspected, snipped, again inspected, graded, inspected again, blanched, sprayed with cold water and packed into cans by hand. Hot water is added. The containers are sealed without exhausting; No. 2 cans are processed at 116 C. for twenty-five minutes and cooled by the air injection method. Sometimes the vines are sprayed with nicotine insecticides. The packer believes that any spray residue is satisfactorily removed by the method of preparation. Not more than twenty-four hours elapses between the picking of the beans and the end of the canning process.

Analysis (submitted by manufacturer).—Moisture 95.6%, total solids 4.4%, ash 0.4%, fat (ether extract) 0.1%, protein (N × 6.25) 1.4%, crude fiber 0.4%, carbohydrates other than crude fiber (by difference) 2.1%.

Calories.—0.15 per gram; 4 per ounce.

Claims of Manufacturer.—For use in special diets in which sugar or salt is proscribed or in quantitative diets of calculated composition.

STEPHENS BRAND PURE LEMON JUICE

Manufacturer.—Natural Food Products Company, Orange, Calif.

Description.—Canned lemon juice.

Manufacture.—Tree ripened lemons, on which no arsenical sprays are used, are washed, dried, inspected, cut in half and the juice removed. The juice is sieved, deaerated and then subjected briefly to ultraviolet rays to inactivate "enzymes" and to reduce the bacterial count. The finished juice is filled into cans, sealed under high vacuum, pasteurized and cooled.

Analysis (submitted by manufacturer).—Moisture 89.9%, total solids 10.1%, ash 0.4%, fat (ether extract) 0.1%, protein (N × 6.25) 0.5%, crude fiber 0.01%, nonreducing sugars as sucrose 0.05%, reducing sugars as invert sugar 1.58%, carbohydrates other than crude fiber (by difference) 2.3%, titratable acidity as citric acid 6.85, specific gravity 20/20 C. 1.0403, vitamin C (iodine titration) 59 mg. per hundred cubic centimeters (1,200 international units).

Calories.—0.1 per gram; 3 per ounce.

Vitamins.—The product contains 355 international units of vitamin C per fluidounce.

MULKEY'S THE ORIGINAL "IODINE" SALT

Distributor.—Mulkey Salt Company, Detroit.

Description.—Table salt containing 0.023 per cent of potassium iodide and 1 per cent of magnesium carbonate.

Manufacture.—Pure water is pumped down through typical salt well casings to the salt deposit, where it forms a brine, which is brought to the surface and evaporated. The sodium chloride crystallizes out and is washed with pure brine, kiln dried and the crystals are screened to uniform size. The salt is mixed with magnesium carbonate, which tends to keep it free running. The iodine is added by weighing out on an accurate scale a high concentration of potassium iodide-sodium chloride mixture. Following the addition of this mixture the final mixture is compounded, packed in special cartons and sealed.

Analysis (submitted by manufacturer).—Calcium chloride, trace; calcium sulfate 0.31%; sodium sulfate, trace; magnesium carbonate 0.62%; sodium carbonate 0.10%; potassium iodide 0.023%; sodium chloride (by difference) 98.9%.

BORDEN'S CHATEAU PIMIENTO

Manufacturer.—The Borden Company, New York.

Description.—Mixture of Cheddar cheese, cream, skim milk powder, pimiento, water, disodium phosphate, sodium chloride, sodium citrate, citric acid and annatto.

Manufacture.—The manufacture is essentially the same as that described for Borden's Chateau (THE JOURNAL, March 26, 1938, p. 958) except that pimiento peppers are added to the Borden's Chateau mix immediately before pasteurization.

Analysis (submitted by manufacturer).—Moisture 39.5%, total solids 60.5%, total ash 5.0%, sodium chloride (NaCl) 1.9%, fat (ether extract) 31.1%, protein (N × 6.38) 21.7%, lactose (by difference) 2.7%.

Calories.—3.78 per gram; 107 per ounce.

Vitamins.—An excellent source of vitamin A and contains vitamins B and G.

CARNATION FLOUR

Manufacturer.—Kell Mill & Elevator Company, Wichita Falls, Texas, a wholly owned subsidiary of General Mills, Inc., Minneapolis.

Description.—Hard-wheat patent flour designed for general baking purposes.

Manufacture.—Hard-wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, and bleached with a mixture of benzoyl peroxide and calcium phosphate (1 part to 50,000 parts of flour) and nitrogen trichloride (1.5 to 3 Gm. per 196 pounds).

Analysis (submitted by manufacturer).—Moisture 13.0 to 14.5%, total solids 87.0 to 85.5%, ash 0.38 to 0.42%, fat (ether extraction method) 0.8 to 1.2%, protein (N × 5.7) 10.0 to 12.0%, crude fiber 0.3 to 0.5%, carbohydrates other than crude fiber (by difference) 75.5 to 71.4%.

Calories.—3.4 to 3.5 per gram; 97 to 99 per ounce.

APPELLA APPLE POWDER (STEARNS)

Distributor.—Frederick Stearns and Company, Detroit.

Packer.—Appella Corporation, Seattle.

Description.—Powdered dried apple pulp. A blend of powder produced from several varieties of apples selected for their high content of pectin and uronic acids, the same as Appella Apple Powder (THE JOURNAL, Nov. 13, 1937, p. 1637).

67. McCay, C. M.: Can We Abandon the Vitamin Alphabet? Science **86**: 347 (Oct. 15) 1937.

REPORTS OF OFFICERS

NOTE.—At the 1925 session of the Association, the House of Delegates suggested that all reports of officers, committees, etc., and resolutions to be brought before the House, if available, be published in advance of the session so as to permit careful consideration and discussion.—Ed.

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following annual report of the Secretary is respectfully submitted:

MEMBERSHIP

On April 1, 1938, the number of members enrolled was 109,435 as compared with 105,460 on the corresponding date in 1937. This enrolment, larger by several thousand than in any preceding year, is based strictly on official reports submitted to the Secretary of the American Medical Association by the secretaries of the constituent state and territorial medical associations. The state and territorial associations do not follow a uniform rule with respect to the removal of names of members whose dues may be in arrears. In some instances, constituent associations have dealt rather leniently with those members whose dues have not been promptly paid, apparently because of the effect on a considerable number of members of the existing economic situation. In some states the membership year strictly corresponds with the fiscal year, while in others the names of members in arrears are continued on official lists for varying periods of time. It is therefore probable that the number of members as here recorded will be reduced to some extent because of the removal of names of members from constituent association lists after April 1.

Increases in membership are shown for thirty-nine of the fifty-four constituent state and territorial associations, while decreases are shown for fourteen. One state association shows the same number of members in 1938 as in 1937. The largest decrease in membership in any constituent association was fifty-four, while losses shown in others varied from one to fifty. The largest increase in membership was shown in New York, with 1,033 new members recorded, and the next largest was in Ohio, with an increase in membership of 738. While it is difficult to determine the exact facts, it is estimated that from 75 to 80 per cent of the total number of eligible physicians engaged in private practice are recorded as members of the American Medical Association.

FELLOWSHIP

The number of Fellows as shown by the official Fellowship roster on April 1, 1938, was 68,478 as compared with 66,296 enrolled on the corresponding date in 1937. This establishes a new Fellowship record. An accompanying table shows the number of counties in each state and territory, the number of component societies as shown by the records in the Secretary's office, the number of members enrolled in the state and territorial associations and the number of Fellows in each state and territory, including commissioned officers of government medical services.

BETTER ORGANIZATION

It is quite evident that a much greater interest is now being taken in the affairs of medical organization than at any previous time since the reorganization of the American Medical Association in 1902. This is clearly shown by the fact that there has been a very decided increase in the number of enrolled members and is even more definitely shown by the tremendous growth of correspondence pouring into the offices of the Association. County medical societies in all parts of the country are carefully studying their organic laws, and in a great many instances improving amendments to the constitutions and by-laws have been made in the past year. A number of state medical associations have amended their constitutions and by-laws or are contemplating amendments, with a view to increased efficiency.

There is a constantly growing tendency in constituent state associations and in the larger component county medical societies toward the employment of full-time secretaries or of full-time executive secretaries, to the end that official matters may be more promptly and efficiently handled. The councils and committees of state medical associations and of a large number of county medical societies are now holding regular meetings at stated intervals and are giving most careful and thorough consideration to matters that properly come before such bodies for official action. In several states, the officers and members of official bodies of constituent associations have officially visited

Organization of Constituent State Associations

	Number of Counties in State	Number of Component Societies in State	Organization of Constituent State Associations: Number of Counties Not Organized 1937	1938	No. of Physicians in State, 14th Ed. A. M. A. Directory	Number of Members of State Associations 1937	1938	Number of Fellows in State
Alabama	67	67	...	...	2,105	1,472	1,518	563
Arizona	14	13	1	1	520	316	339	240
Arkansas	75	64	9	9	1,911	1,051	1,068	426
California	58	39	10	10	10,859	5,695	5,906	3,855
Colorado	63	28	...	...	1,933	1,139	1,135	755
Connecticut	8	8	...	...	2,401	1,543	1,621	1,054
Delaware	3	3	...	...	316	198	209	138
Dist. of Columbia	..	..	...	...	1,979	783	825	648
Florida	67	33	23	21	1,939	1,178	1,231	691
Georgia	161	95	48	44	2,765	1,807	1,793	697
Idaho	44	9	...	...	410	257	227	152
Illinois	102	93	6	6	11,672	7,287	7,485	4,760
Indiana	92	83	1	1	4,025	2,958	3,087	1,728
Iowa	99	97	...	...	3,146	2,416	2,414	1,423
Kansas	105	68	21	20	2,188	1,529	1,509	1,042
Kentucky	120	114	4	4	2,770	1,712	1,770	785
Louisiana	64	41	19	18	2,135	1,328	1,324	884
Maine	16	15	1	1	966	700	690	396
Maryland	23	22	1	1	2,780	1,379	1,384	907
Massachusetts	14	18	...	...	7,263	4,962	5,109	3,100
Michigan	83	54	...	...	5,865	3,742	3,987	2,364
Minnesota	87	34	2	1	3,283	2,347	2,519	1,553
Mississippi	82	21	1	1	1,515	995	945	332
Missouri	114	81	12	11	5,496	3,201	3,216	1,950
Montana	56	16	26	25	483	339	357	223
Nebraska	93	50	20	19	1,781	1,069	1,094	717
Nevada	17	5	12	12	149	101	104	66
New Hampshire	10	9	...	...	593	455	498	272
New Jersey	21	21	...	...	5,177	3,193	3,399	2,494
New Mexico	31	14	19	14	401	236	238	166
New York	62	61	1	1	24,013	15,047	16,080	10,226
North Carolina	100	73	2	19	2,570	1,591	1,616	823
North Dakota	53	13	10	10	526	387	413	255
Ohio	88	87	2	2	8,907	5,361	6,099	3,707
Oklahoma	77	65	7	7	2,380	1,524	1,470	794
Oregon	36	23	3	3	1,344	755	746	476
Pennsylvania	67	60	6	6	12,889	8,588	8,874	6,012
Rhode Island	5	6	1	1	924	488	488	300
South Carolina	46	39	...	2	1,335	874	897	397
South Dakota	69	13	3	2	562	323	320	191
Tennessee	95	60	26	24	2,939	1,669	1,727	826
Texas	254	130	12	15	6,729	4,159	4,230	2,132
Utah	29	9	4	4	543	416	443	251
Vermont	14	10	3	3	503	376	373	214
Virginia	100	47	9	9	2,734	1,725	1,739	968
Washington	39	24	13	13	2,049	1,398	1,401	835
West Virginia	55	30	5	5	1,792	1,194	1,207	688
Wisconsin	71	52	...	...	3,387	2,349	2,435	1,543
Wyoming	24	11	10	11	261	143	166	107
Alaska	..	..	...	...	56	37	36	20
Hawaii	5	4	1	1	378	257	266	120
Isthmian Canal Zone	..	..	...	...	187	95	118	20
Philippine Islands (provinces)	56	16	45	40	2,783	969	921	49
Puerto Rico (districts)	7	7	...	...	415	347	370	74
Foreign	..	..	...	...	23	...	...	184
Totals	3,141	2,055	399	397	169,005	105,460	109,435	65,650
Commissioned medical officers								2,828
								68,478

all the county societies within their respective jurisdictions, while in other states such visits have been made to all counties in which meetings could be arranged. The attendance of presidents and other representatives of state medical associations at the Annual Conference of Secretaries of Constituent State Medical Associations held at Association headquarters in Chicago each year is increasing. There are many other indications of increased efficiency on the part of constituent associations and component societies. However, while there is just cause for gratification, it must be regretfully admitted that there is still great need for better organization and increased efficiency in many places.

In some instances interest in the scientific work of county medical societies is apparently lagging to an unfortunate degree. There is good reason to believe that this may be due to the fact that the scientific programs of such societies have become static and have been largely confined to the discussion of a limited range of subjects. In other instances it is quite possible and even probable that the scientific functions of county medical societies have been given over to other groups, even though the official membership of such groups largely corresponds with the membership of the societies themselves. On the other hand, the scientific work of a number of the state associations and of a much larger number of county medical societies is being vigorously prosecuted and is generously supported by the general membership. There is a decided tendency toward the development of scientific programs of a nature far different from those that have usually been presented. There seems to be a desire on the part of a great many physicians to have the scientific programs place especial emphasis on the purely clinical aspects of medical practice, and it would seem to be the part of wisdom for the officers and members of program committees to give careful thought to the possibility of making changes that may be necessary to awaken and to hold the continued interest of their members.

FIELD WORK

The demand for the services of members of the official and administrative personnel of the Association as speakers before scientific and lay groups has increased to such an extent that it has been altogether impossible to meet it fully, though the number of such appearances was far greater in 1937 than in any preceding year.

Several constituent state medical associations have organized bureaus for the purpose of providing speakers, and these bureaus have received splendid cooperation that has enabled them to meet most of the requests for speakers.

The American Medical Association, a few of the state associations and a considerable number of county medical societies have, with the cooperation of broadcasting companies and individual stations, conducted radio programs that have been heard by many listeners in all parts of the United States. Many of the state and county medical societies, through official committees, have maintained helpful contacts with civic and official organizations interested in public health.

PROPOSED AMENDMENTS TO THE CONSTITUTION

At the annual session of the Association held in Atlantic City in 1937, the Judicial Council submitted the following resolution:

WHEREAS, The Constitution and the By-Laws refer to the election annually of a President and President-Elect when in fact only a President-Elect is elected; and

WHEREAS, No provision is made in the Constitution and By-Laws for a succession in office in case of death or disability of the President-Elect; be it

Resolved, That article 6, section 2, of the Constitution be amended to read, "*(a)* The President-Elect shall be elected annually. He shall serve as President-Elect until the annual session of the Association next ensuing after his election and shall become President on his installation in the course of that session, serving thereafter as President until the next following annual session and the installation of his successor. If the President-Elect dies, resigns, or in the judgment of the Board of Trustees confirmed by the House of Delegates is permanently disqualified for the performance of the duties of his office by any just cause, the Vice President shall become President-Elect and in due course succeed to the presidency, with all of the prerogatives and duties pertaining to that office, as fully as if elected to it in the first instance: Provided, however, that the President-Elect who is elected at the annual session of the Association in 1937 shall, notwithstanding his election as such for the period of one year only, be installed as President in the course of the session in 1938 and continue as such until the session in 1939 and the installation of his successor.

(b) A Vice President, a Secretary, a Treasurer, and a Speaker and a Vice Speaker of the House of Delegates shall be elected, each to serve for one year and until his successor is elected and installed: Provided, however, that in event of the death, resignation or removal, or of the permanent disability of the President-Elect as determined by the Board of Trustees, the Vice President shall succeed to the office of President-Elect and in due course to the office of President, notwithstanding the fact that he was in the first instance elected as Vice President for one year only."

This resolution received the consideration of the Reference Committee on Amendments to the Constitution and By-Laws. The following report was submitted to the House of Delegates by the Reference Committee and was adopted, after which the Speaker of the House ruled that the proposed amendments would lie over for one year to receive official consideration at the annual session in 1938:

The resolution to amend the Constitution dealing with the election of the President and President-Elect of the Association, introduced by Dr. George Edward Follansbee, Chairman, Judicial Council, has received consideration at the hands of your committee.

Since this is an amendment to the Constitution, it will have to lie over for a period of one year before final action can be taken by this House.

The purport of the amendment to the present Constitution is to make better provision for succession in office in case of death or of disability of the President-Elect. In giving consideration to this important matter, your reference committee feels that this body might take under advisement the possibility of providing by constitutional amendment a Vice President-Elect to be included in the general officers of the Association. Such provision is not made in the present Constitution, nor does the proposed amendment make such provision. Such provision would necessitate the amendment of Section 1 of Article VI of the Constitution by including a Vice President-Elect as one of the general officers of the Association, as well as making certain alterations in the phraseology of the proposed amendment.

No resolutions intended for presentation to the House of Delegates have been sent to the Secretary's office up to the time of the preparation of this report.

Most grateful acknowledgment is here made of the helpful kindnesses that have been extended to the Secretary by members of official bodies of the Association, including the House of Delegates, by secretaries and other officers of constituent state and territorial associations and of component county societies, and by a large number of the individual members of the Association.

Respectfully submitted.

OLIN WEST, Secretary.

REPORT OF THE BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association:

Death of Dr. George H. Simmons

Dr. George H. Simmons, Editor and General Manager Emeritus, died in Chicago on Sept. 1, 1937. The following resolution, in which the great service rendered by Dr. Simmons to American medicine is set forth, was officially adopted by the Board of Trustees and spread on its minutes:

WHEREAS, Dr. George H. Simmons rendered distinguished service to the medical profession and to the American Medical Association from 1899, when he became Secretary and Editor, through 1924, when he retired holding the positions of Editor and General Manager; and

WHEREAS, During this period of twenty-five years, his wise leadership, his courage, his progressiveness and his initiative advanced the interests and the status of the Association to heights never before reached by any medical organization; and

WHEREAS, His work for the American Medical Association was characterized by intelligence, unselfishness, honesty and righteousness, and his interest endured to the very end of his days; and

WHEREAS, The Board of Trustees, through its intimate contact with Dr. George H. Simmons in all of these works, is cognizant of the extent to which he gave of himself freely for the good of all; therefore be it

Resolved, That this Board of Trustees spread upon its minutes its recognition of his accomplishment, and that it tender to his relatives a suitable copy of these resolutions and its sincere sympathy in their sorrow at his passing.

The General Work of the Association

The year covered in this report of the Board of Trustees has been characterized by a very notable expansion in the activities of the various councils, bureaus and departments of the Association until, at times, available facilities have been seriously strained. A constantly growing interest on the part of the general membership in changing social conditions;

increased efficiency of medical organization in counties and states throughout the nation; a more active and intelligent interest on the part of the public in matters pertaining to public health and medical service; legislative activities in the states and in the federal government; the consideration of important questions pertaining to medical education, hospital operations and the extension of public health programs; greater financial and administrative participation on the part of the federal government in public health affairs in states and in communities; proposals for the development of medical and hospital service plans for the benefit of the members of low income groups and actual operation of such plans, and a notable increase in the number of members of the Association together with many other important factors have brought into the headquarters offices a veritable flood of inquiries and demands for information and service. An earnest effort has been made to meet such demands as fully and as helpfully as possible.

Business Operations

The official Report of the Treasurer and the official Report of the Auditors are submitted to the House of Delegates as a part of this report of the Board of Trustees.

The gross earnings for the year ended Dec. 31, 1937, amounted to $1,654,203.74 as compared with $1,547,218.23 in 1936. Operating expenses were $982,830.10 as compared with $909,417.95 in the preceding year. Association expenses including expenditures incident to the operations of councils, bureaus and departments amounted to $431,635.63 as compared with $411,028.93 in 1936, while miscellaneous expenses for the year 1937 including insurance and taxes, building expenses and depreciation, fuel, legal services and the cost of sundry publications amounted to $218,601.19 as compared with $209,382.37 in 1936. The net income for the year was $122,242.92, of which sum $83,563.74 represented income from investments, so that the actual net operating income was $38,679.18.

While only a few of the bonds owned by the Association have defaulted in the payment of interest, there has been a rather serious depreciation in the market value of some of the securities held. The Board of Trustees, the Treasurer and the General Manager of the Association have sought the best available advice with respect to investment of the Association's funds. In accordance with the situation that generally prevails, the average interest return on invested funds has been decreased because of the substitution of securities bearing lower interest rates than those which formerly obtained.

The payment of wages and salaries, exclusive of those involved in the operation of councils and bureaus, amounted to $460,182.01 in 1937 as against $443,693.17 in 1936. Increased labor costs in effect during the latter part of the year accounted for most of the increase in this item, and notification has already been received to the effect that these costs will be further increased during the current year. The cost of paper in 1937 was $241,663.85 as compared with $208,922.37 in the preceding year. These costs would have been considerably larger except for the fact that the fullest possible advantage was taken of the opportunity to purchase paper stock before material increases in the market price went into effect. The sum of $97,274.89 was expended for postage in 1937 as against $92,123.08 in 1936.

Fellowship dues and subscriptions paid in 1937 amounted to $670,170.31 as compared with $638,243.18 in 1936, the increase being due, principally, to increased circulation of THE JOURNAL and to a rather notable increase in the number of Fellows enrolled. Total receipts from the sale of advertising space in Association publications were $841,042.57 as against $780,299.01 in 1936.

The number of employees at the time of the preparation of this report was 616.

The purchase of some new machinery and equipment, contemplated when the last annual report of the Board of Trustees was submitted to the House of Delegates, was deferred, in part for the reason that some of the machinery that must be purchased will have to be newly constructed and in part because some of the older machinery which it had been intended to discard was repaired or partially rebuilt so as to extend its usefulness. It will be necessary to install some new machinery in the printing department during the current year. Increased activities of the councils, bureaus and departments of the Association have required the purchase of a considerable amount of new office material.

In the Report of the Treasurer and in the Report of the Auditors, submitted herewith, will be found more fully itemized statements of income and expenditure.

Summary

Gross earnings and miscellaneous income were larger in 1937 than 1936, while operating and miscellaneous expenses were also considerably larger. Income from investments was slightly larger than in 1936. The net income for the year was $122,242.92, of which amount $83,563.74 represented interest on investments and $7,453.20 represented miscellaneous income.

The Association Building

The experience of the past year has fully justified the action taken by the Board of Trustees whereby the entire building was remodeled and two new stories and an assembly hall were added. Better working conditions have been afforded in all departments, and it has been possible by reason of building expansion to bring closer together councils and bureaus whose work is closely correlated and thereby to avoid unnecessary duplication of effort and to increase efficiency.

Many commendatory expressions have been received concerning the beauty of the Association's building as it now stands. The Board of Trustees would urge the members of the House of Delegates and the members and Fellows of the Association who may find opportunity to do so to visit the headquarters offices to see at first hand the nature and the scope of the work that is being prosecuted there.

The Journal of the American Medical Association

The place held by THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in the field of medical periodicals is now so well established that it is unnecessary to offer comment on this point. Nevertheless, the publication has not been static. It has developed a new series of articles on the relationship of the pharmacopeia and the physician. It has continued its campaigns against mortality from typhoid and from diphtheria and has reestablished the campaign against Fourth of July accidents.

The publication formerly called the BULLETIN OF THE AMERICAN MEDICAL ASSOCIATION is now fully incorporated in THE JOURNAL as the Organization Section. Here special attention is given to problems of organization, to medical economics, to reports of activities of various councils, bureaus and departments, and to the work of the Woman's Auxiliary. The value of this week by week circulation of important information in the field of economics and of organization for the maintenance of interest of the individual physician cannot be overestimated. Because of the significance of this material, the Board of Trustees would recommend that it be placed in the center of THE JOURNAL and incorporated as a regular feature on medical economics.

Attention should be called in this connection to the arrangements that have been made whereby officials of the British Medical Association contribute regularly important statements as to medical economic conditions in Great Britain and as to the manner in which the British Medical Association is attempting to solve its problems.

Especially noteworthy among the features of 1937 was the exposé of the cause for the deaths of more than seventy persons who had taken an elixir of sulfanilamide. The prompt exposé of new methods of treatment of cancer not fully established, and the regular reports of the Council on Pharmacy and Chemistry, the Council on Foods and the Council on Physical Therapy serve to protect both the public and the medical profession against unestablished and even fraudulent methods of treatment as well as to keep the medical profession abreast of what has been fully established in these fields.

During the year the series of articles on "The Therapy of the Cook County Hospital" has been continued so that even-

tually the complete series will be available in book form. Special issues of THE JOURNAL have been devoted to hospitals, to medical education and to the state licensing boards as well as to the annual session. Each of these special issues has been the means of extending widely the work carried on by the Association for the raising of standards of medical education.

In the campaign of the United States Public Health Service for the control of pneumonia, THE JOURNAL cooperated by conducting a survey of hospitals in the United States as to the facilities for the typing of pneumococci and by prompt publication of the available material for the education of the medical profession in modern methods of diagnosis and treatment.

A feature of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION not duplicated in any other medical publication in the world is the department of Queries and Minor Notes. Each year some 5,000 questions are submitted to this department by physicians who wish information regarding the diagnosis, treatment or handling of individual cases, an official opinion on the new drugs and new procedures, information regarding industrial poisons, discussions of disease, advice regarding new laboratory methods or specific references to the available literature. About 20 per cent of the questions received are referred for reply to physicians recognized as authorities in the fields concerned. Many of the questions are answered from available medical literature, some of them by answers already published and many by personal communications, usually supplemented with material from the library of the American Medical Association. Approximately 40 per cent of the questions come from physicians in communities where adequate library facilities are available, the remainder from communities without opportunities for such consultation.

TABLE 1.—*Approximate Count of Fellows and Subscribers on The Journal Mailing List, by States, Jan. 1, 1938; Also Gain or Loss in Each State*

State	Fellows	Subscribers	Totals	Gain	Loss
Alabama	511	244	755	20	..
Arizona	217	127	344	15	..
Arkansas	389	192	581	26	..
California	3,509	2,692	6,201	274	..
Colorado	665	302	967	18	..
Connecticut	1,008	566	1,574	47	..
Delaware	127	82	209	13	..
District of Columbia	616	515	1,131	20	..
Florida	670	344	1,014	35	..
Georgia	628	418	1,046	32	..
Idaho	136	114	250	2	..
Illinois	4,333	2,843	7,176	221	..
Indiana	1,584	629	2,213	89	..
Iowa	1,247	402	1,649	18	..
Kansas	908	254	1,162	..	74
Kentucky	714	356	1,070	50	..
Louisiana	663	316	979	66	..
Maine	372	143	515	6	..
Maryland	845	621	1,466	21	..
Massachusetts	2,827	1,623	4,450	194	..
Michigan	2,196	1,283	3,479	135	..
Minnesota	1,373	603	1,976	71	..
Mississippi	286	125	411	23	..
Missouri	1,779	874	2,653	38	..
Montana	190	91	281	..	3
Nebraska	631	290	921	..	31
Nevada	61	29	90	..	..
New Hampshire	259	90	349	11	..
New Jersey	2,363	1,403	3,766	205	..
New Mexico	144	90	234	1	..
New York	9,542	5,687	15,229	653	..
North Carolina	742	497	1,239	67	..
North Dakota	203	80	283	..	4
Ohio	3,406	1,583	4,989	125	..
Oklahoma	685	266	951	..	33
Oregon	420	286	706	17	..
Pennsylvania	5,664	2,481	8,145	386	..
Rhode Island	341	194	535	2	..
South Carolina	339	235	574	41	..
South Dakota	178	101	279	..	6
Tennessee	742	418	1,160	55	..
Texas	1,839	813	2,652	97	..
Utah	222	97	319	6	..
Vermont	203	81	284	9	..
Virginia	915	406	1,321	39	..
Washington	735	384	1,119	28	..
West Virginia	611	268	879	48	..
Wisconsin	1,376	645	2,021	53	..
Wyoming	95	58	153	..	..
U. S. Army	...	171	171	..	2
U. S. Navy	...	241	241	9	..
Alaska	18	19	37	2	..
Canada	9	848	857	51	..
Cuba	3	100	103	22	..
Hawaii	104	80	184	15	..
Mexico	10	112	122	20	..
Panama	16	38	54	6	..
Philippine Islands	45	185	230	16	..
Puerto Rico	62	73	135	30	..
Virgin Islands	2	5	7	2	..
Foreign	110	2,811	2,921	245	..
Advertisers, agents	...	...	529	28	..
Exchanges	...	...	308	..	2
Complimentaries	...	...	101	2	..
Total on mailing list			97,750	3,725	155

TABLE 2.—*Physicians Receiving The Journal**

State	Number Receiving Journal	Physicians in State; A.M.A. Directory	Approximate Percentage Receiving Journal
Alabama	755	2,105	36
Arizona	344	520	66
Arkansas	581	1,911	30
California	6,201	10,859	57
Colorado	967	1,933	50
Connecticut	1,574	2,401	66
Delaware	209	316	66
District of Columbia	1,131	1,979	57
Florida	1,014	1,939	52
Georgia	1,046	2,765	38
Idaho	250	410	61
Illinois	7,176	11,672	61
Indiana	2,213	4,025	55
Iowa	1,649	3,146	52
Kansas	1,162	2,188	53
Kentucky	1,070	2,770	39
Louisiana	979	2,135	46
Maine	515	966	53
Maryland	1,466	2,730	54
Massachusetts	4,450	7,263	61
Michigan	3,479	5,865	59
Minnesota	1,976	3,283	60
Mississippi	411	1,515	27
Missouri	2,653	5,496	48
Montana	281	483	58
Nebraska	921	1,781	52
Nevada	90	149	60
New Hampshire	349	593	59
New Jersey	3,766	5,177	73
New Mexico	234	401	58
New York	15,229	24,013	63
North Carolina	1,239	2,570	48
North Dakota	283	526	54
Ohio	4,989	8,907	56
Oklahoma	951	2,380	40
Oregon	706	1,344	53
Pennsylvania	8,145	12,889	63
Rhode Island	535	924	58
South Carolina	574	1,335	44
South Dakota	279	562	50
Tennessee	1,160	2,939	39
Texas	2,652	6,729	39
Utah	319	543	59
Vermont	284	503	56
Virginia	1,321	2,734	48
Washington	1,119	2,049	54
West Virginia	879	1,792	49
Wisconsin	2,021	3,387	59
Wyoming	153	261	59

* This table gives the number of physicians (based on the Fourteenth Edition of the American Medical Directory) in the United States, the number receiving THE JOURNAL and the approximate percentage in each state. Copies to physicians in the United States Army and Navy are not included.

The accompanying table 1 indicates the number of Fellows and subscribers on the mailing list of THE JOURNAL, by states, on Jan. 1, 1938, and the gain or loss. Table 2 shows the percentage of physicians receiving THE JOURNAL in each state, the figures being based on the Fourteenth Edition of the American Medical Directory.

The circulation of THE JOURNAL on Jan. 1, 1938, was 97,750, as compared with 94,180 Jan. 1, 1937. The net paid circulation Jan. 1, 1938, was 96,812.

Summary

Continued effort has been made to increase the usefulness of The Journal. New features include the development of a series of articles on the relationship of the pharmacopeia and the physician. Campaigns against mortality from typhoid and from diphtheria and against Fourth of July accidents have been reestablished.

The publication formerly known as the Bulletin of the American Medical Association is now fully incorporated in The Journal as the Organization Section. In this section special attention is given to problems of organization, to medical economics, and to the activities of various councils, bureaus and departments and the Woman's Auxiliary.

Arrangements have been made whereby officials of the British Medical Association contribute regularly statements concerning medical economic conditions in Great Britain and the manner in which the British Medical Association is attempting to deal with such matters.

The prompt publication in The Journal of all the facts concerning the disastrous results of the use of the product known as Elixir of Sulfanilamide, the prompt exposé of newly promoted methods of treatment of cancer not fully established, and regular reports of the Council on Pharmacy and Chemistry, the Council on Foods and the Council on Physical Therapy have attracted wide attention and have served to protect the public and the medical profession against unestablished and even fraudulent methods of treatment.

The series of articles on the Therapy of the Cook County Hospital has been continued, and these articles will eventually be made available in book form.

Special issues of The Journal have been devoted to medical education, to hospitals and to the activities of state licensing boards. Each of these special issues has been helpful in extending the work carried on by the Association for the improvement of standards of medical education.

The Journal has cooperated with the United States Public Health Service in the campaign to establish better control over pneumonia. A survey was made of the facilities available in the hospitals of the United States for the typing of pneumococci, and available material concerning modern methods of diagnosis and treatment of pneumonia has been promptly published.

An important feature of The Journal is the department devoted to Queries and Minor Notes. Approximately 5,000 questions are submitted by physicians each year. These questions cover a wide range of subjects. While most of them are answered by members of the official staff of the Association, about 20 per cent are referred for reply to physicians recognized as authorities in the fields concerned. Approximately 40 per cent of such inquiries come from physicians in communities where adequate library facilities are available, and the remainder from physicians in communities without opportunities for such consultation.

Special Journals

The eight special periodicals published by the Association have been maintained at their usual high standards of previous years, both scientifically and mechanically. The number of pages of reading matter varied but slightly over the preceding year, but there was an increase of fifty in the number of pages of advertising carried. Five of the journals showed an increase of seventy-two pages of advertising matter, while three showed a decrease of twenty-two pages.

The January 1937 issue of the ARCHIVES OF DERMATOLOGY AND SYPHILOGY was dedicated to Dr. William Allen Pusey, who retired from the Editorial Board at the close of 1936 after having served as Editor in Chief for seventeen years. The articles in this issue were contributed by physicians and laymen who had been associated with Dr. Pusey in various capacities.

The April 1937 issue of the ARCHIVES OF NEUROLOGY AND PSYCHIATRY was dedicated to Dr. Adolf Meyer in honor of his seventieth birthday and as an expression of appreciation for his service to psychiatry and to American medicine. This issue contained 272 pages of articles contributed by Dr. Meyer's former pupils. He has served as a member of the Editorial Board of the ARCHIVES OF NEUROLOGY AND PSYCHIATRY for approximately ten years.

A supplement to the January 1937 issue of the AMERICAN JOURNAL OF DISEASES OF CHILDREN was published and contained two articles on basal metabolism comprising 156 pages.

The Board of Trustees has carefully considered requests that the Association undertake the publication of several independent journals devoted to special fields of medicine but has not been able to comply with these requests. The Board of Trustees has considered it inadvisable to permit any of the periodicals published by the Association to be known as the official organ of any specialistic medical society. Requests for a reconsideration of this decision have been received, but up to this time no evidence has been submitted to convince the Board of Trustees that its official attitude should be changed.

The cost of publication of the special scientific journals over income received was $25,958.37. Only two of the publications in this group produced income larger than production costs. The loss thus sustained was less by the sum of $7,862.93 than in 1936.

While it seems probable that it never will be possible to publish the special journals without financial loss, the Board of Trustees has believed, and apparently has been supported by the House of Delegates in this belief, that these publications constitute a distinct contribution to scientific medical literature and that the cost involved is fully justified by that fact. However, there is a limit beyond which, in the opinion of the Board of Trustees, it would not be wise to go in the continued absorption of yearly losses. Some of the special journals have encountered competition because of new publications fostered by special groups and published by commercial organizations. In some instances these competing periodicals, though they have been made official organs of special groups whose members are members and Fellows of the American Medical Association, have accepted advertising matter of a kind that is not acceptable for the Association's publications.

All the special journals had a larger circulation in 1937 than in 1936, but in no instance was the increase as large as it should be in view of the excellence of scientific material presented in these publications.

Summary

The special journals of the Association have been maintained at their usual high standards. While the total circulation of this group of periodicals was larger in 1937 than in the previous year, the increase was not as large as would be fully justified by the quality of the scientific material presented.

New publications in the same fields as those covered by some of the special journals have been established within the last few years as the official organs of special societies.

The loss incurred through the publication of the special journals in 1937 was $25,958.37, as compared with a loss of $33,821.30 in 1936. Only two of the journals produced incomes larger than production costs.

Library and Quarterly Cumulative Index Medicus

Throughout the country, the Library of the American Medical Association has come to be recognized as one of its greatest assets and as one of the chief facilities for rendering to the medical profession a service of the utmost importance in relationship to graduate education and the practical application of medical care. The services of the Library include the compilation and editing of the QUARTERLY CUMULATIVE INDEX MEDICUS, the package library service, the periodical loan service, the indexing of THE JOURNAL and the usual services rendered by a reference library.

The work of the QUARTERLY CUMULATIVE INDEX MEDICUS, which is everywhere recognized as one of the greatest contributions of the American Medical Association to medical research and the advancement of medical science, has now become systematized so that it is carried on regularly in a routine manner. The circulation of the QUARTERLY CUMULATIVE INDEX MEDICUS was approximately 6 per cent larger in 1937 than in the preceding year, but the total income from sales of this publication is far below the amount required to equal the costs of preparation and publication. In 1937 expenditures exceeded income received through subscriptions to the QUARTERLY CUMULATIVE INDEX MEDICUS by the sum of $42,616.32, slightly more than in 1936 but less than the losses shown in 1934 and 1935. The production of the QUARTERLY CUMULATIVE INDEX MEDICUS is an essential activity of the Association and deserves far more liberal support than it is receiving from individual physicians and medical institutions.

More than 1,400 periodicals are regularly received in the Library and are available for indexing and for reference purposes. As a result of the war in Spain, practically no scientific Spanish periodicals have been received during 1937, and those are omitted from the index for that year. As a result of significant changes in the periodical literature of Central Europe, scientific medical material available for indexing is less in amount and apparently of a different quality.

Because of the popularity of the package library service, the rule requiring written requests for material has been strictly enforced. All requests are handled in order of receipt, regardless of whether the physician is a resident of Chicago or of Seattle. The number of packages requested is approximately the same as in previous years. Altogether, 3,014 packages were distributed during 1937. The subjects called for indicate the trend of medical progress and scientific interest. The leading subjects include dementia praecox, alcohol and alcoholism, arthritis, pneumonia, sulfanilamide, undulant fever and the progress of medicine.

The periodical loan service continues to be exceedingly popular, since it makes available to practitioners everywhere the original reference material to which attention may have been called by the indexes and the abstracts. Members and subscribers requested 10,759 periodicals during 1937. Moreover, the Library answered about 6,200 general reference questions and telephone inquiries during the year. Notwithstanding the fact that the facilities for the use of the Library by visitors are not extensive, 1,262 physicians called in person during 1937 to obtain the services of this department.

The Library also conducts a subsidiary department devoted to the circulation of reading material for employees of the Association. During the year, 5,220 books were borrowed by employees, with an average daily circulation of twenty-one books.

Summary

The services of the Association's Library include the compilation and editing of the Quarterly Cumulative Index Medicus, the package library service, the periodical loan service, indexing of The Journal and the usual services rendered by a reference library.

More than 1,400 periodicals are regularly received in the Library and are available for indexing and for reference purposes. Because of the war in Spain, very few Spanish periodicals were received during the last year and scientific medical material available for reference and for indexing from Central Europe has been less in amount than heretofore and apparently a different quality.

The Quarterly Cumulative Index Medicus, recognized as one of the greatest contributions of the Association to the advancement of medical science, had wider circulation in 1937 than in the previous year, but the cost of publication exceeded income received from subscriptions by the sum of $42,616.32, slightly more than in 1936 but less than in 1934 and 1935. This publication represents an essential activity of the Association and deserves far more liberal support than it now receives.

More than 3,000 library packages were distributed during the year and nearly 11,000 periodicals were lent to physicians through the periodical loan service. The Library answered more than 6,000 general reference questions, and though the facilities for the use of the Library by visitors are not extensive, more than 1,200 physicians called in person during the year to obtain the services of this department. Through the Employees' Library 5,220 books were made available for the use of the working personnel of the Association.

Standard Classified Nomenclature of Disease

During 1937, by action of the Board of Trustees, the editorial department of the American Medical Association took over the publication, and the correspondence incident thereto, of the Standard Classified Nomenclature of Disease—a cooperative effort formerly subsidized by the Commonwealth Fund. This editorial function has been placed under an assistant editor, Dr. Edwin P. Jordan. The demand for the work since it has been taken over by the Association was so great that it was necessary to reprint promptly the available edition of this work, which is gradually being adopted by more and more hospitals as a means of preparing standard indexes of case records. The recommendation has been received for publication at some future date of a supplement to this standard nomenclature containing a standard nomenclature for surgical operations. It has also been proposed to undertake cooperative effort with the Bureau of Census so as to secure some uniformity of the nomenclature of disease with the international list of causes of death. The recommendation is also made to the Board of Trustees and to the House of Delegates for a conference to be held in the headquarters office of the American Medical Association in 1940 to which all the scientific societies which cooperated in the development of the present nomenclature will be invited to send representatives preliminary to the publication of a new edition of this work.

Hygeia

The circulation of HYGEIA, the Health Magazine, published by the American Medical Association, reached during 1937 the highest figure in its history, after fifteen years of continuous publication. A comparison of the present publication with the numbers issued during 1923 indicates the great progress that has been made in the development of this periodical from the point of view of its typography, illustrations and the quality of the material contained. More and more the special appeal of HYGEIA as a periodical useful in the schools has become apparent. Moreover, a special section has been developed to correlate the radio program of the American Medical Association (now directed primarily to the schools) with the text material available through HYGEIA. Of particular importance as new features in this publication are the series of articles on vision and light, on quackery and its methods, on parasites that affect human beings, and on hygiene—both personal and public. Another feature introduced during 1937 and now developing much acclaim is the teaching of health through pictures, each issue of HYGEIA now containing from four to six pages of pictorial education regarding the human body in health and in disease. The questions and answers regularly published in HYGEIA and the communications received from its readers are evidence of the place that it has come to occupy in its field.

Summary

While there was a gain in the average monthly circulation of Hygeia in 1937, publication costs exceeded income by the sum of $31,004.90, largely because of the difficulties encountered in maintaining circulation. The advertising income in 1937 was larger by the sum of $4,629.29 than in 1936.

Improvements have been made in typography and illustrations as well as in the quality of reading material.

A section has been developed to correlate the Association's radio program with the text of Hygeia.

Cooperative Medical Advertising Bureau

Commissions earned by the Cooperative Medical Advertising Bureau, which represents thirty-three of the official publications of the constituent state medical associations, amounted to $30,681.91 in 1937. Of this amount the sum of $15,000 was remitted to the state medical journals. Advertising contracts secured through the Bureau for the state journals in 1937 amounted to $156,705.47.

Mr. E. W. Mattson, after having served most efficiently as director of this Bureau for twenty-four years, retired from active service on Dec. 31, 1937.

Summary

The earnings of the Cooperative Medical Advertising Bureau in 1937 were $30,681.91. Of this amount, $15,000, almost 50 per cent of the total earnings, was remitted to the state journals. The amount involved in advertising contracts secured by the Bureau was $156,705.47.

Mailing and Order Department

The total number of orders passing through the Order Department in 1937 was 68,282, and the total number of units distributed as a result of these orders was 474,483. The greatest demand was for material issued through the Bureau of Health and Public Instruction, and the next greatest demand during the year was for material prepared by the Bureau of Medical Economics.

In handling the orders referred to nearly 6,000 mail bags were used with a total weight of 174 tons.

Slightly less than 400,000 pieces of first class mail and more than 1,000,000 pieces of third class mail passed through the Mailing Department in 1937.

The Motion Picture on Syphilis

Through a cooperative effort of the American Medical Association with the United States Public Health Service, a seven reel talking motion picture on "Syphilis" was made available during 1937. In the development of this picture, to be used in graduate education regarding syphilis, the following physicians participated:

Executive Committee: Drs. Morris Fishbein, Austin A. Hayden and Olin West.

Participating in the picture: Drs. Charles Gordon Heyd, Thomas Parran, John H. Stokes, Harold N. Cole, Paul O'Leary, James R. McCord, Philip C. Jeans, Joseph E. Moore and R. A. Vonderlehr.

During the year the picture was circulated widely among county and state medical societies and in medical schools. Extra copies were purchased by the United State Public Health Service and by health departments of several states. The success of this film is an indication of the possibilities in this method of graduate education for the future.

The text of the film has been reproduced in pamphlet form as a means of extending the information provided in the film itself.

The Conference on Publicity for Scientific Medicine

By direction of the Board of Trustees a conference was held during 1937 in the headquarters office of the American Medical Association on the provision of adequate publicity for medical science. This conference was attended by representatives of the leading press services, newspapers and periodicals of the United States as well as by writers of syndicated columns on health. This interchange of opinions and experiences served to bring out some of the difficulties inherent in the securing of adequate publicity for medical science as a means of educating the public regarding progress in medicine and the motives of the medical profession. The complete report was published in the Organization Section of THE JOURNAL. Its reception by the medical profession indicated so much interest that the Board of Trustees plans a similar conference in the future.

Books Published by the American Medical Association

During 1937 there became available in addition to the publications of the various councils the eleventh edition of the "Handbook of Therapy," published by the American Medical Association.

There also appeared in book form a translation into German of the volume on "Glandular Physiology and Therapy."

The Editorial Department has also been active in developing a book on "Medical Writing" and a new edition of "The Technic of Medication."

Retirement Fund

From time to time it has become necessary for members of the Association's administrative personnel to retire from active duty after years of devoted and efficient service and for the Association to provide retirement pay for some of those who have thus been placed on the inactive personnel list. Believing that it is the duty of the Association to make provision for the comfort and well being of those who have rendered long and valuable service to the Association and who have not been able to provide a competency for their use in their declining years, the Board of Trustees has taken official action whereby the sum of $25,000 will be set aside each year until an adequate amount has been accumulated, the fund thus established to be known as the Retirement Fund and to be used for the benefit of employees who because of increasing age or impaired health have found it necessary to relinquish active official duties.

Medical Patents

The Board of Trustees finds that medical patents are now held and administered by universities, special committees and foundations and by individual physicians; that patents held under such conditions may sometimes be used to influence the progress and direction of medical research; that the Principles of Medical Ethics of the American Medical Association prevent any individual physician from deriving any income from medical discoveries, whereas technicians or laymen associated with the same discovery may profit directly, and that there is need for some standardizing or coordinating agency in this field.

The Board of Trustees therefore recommends that the American Medical Association develop as complete a list as possible of medical patents and the holders thereof, and that these holders be invited to send representatives to a national conference to be held in the headquarters of the American Medical Association for discussion of this topic, with a view to deriving therefrom recommendations leading toward suitable practice in the administration and control of medical patents.

Proposed Change in Name of Bureau of Health and Public Instruction

The Board of Trustees recommends that the name of the Bureau of Health and Public Instruction be changed to "Bureau of Health Education." The present name of the Bureau is unnecessarily long, and it is believed that the shorter name suggested by the Board of Trustees fully comprehends the Bureau's functions.

In order that the proposed change may be properly effected, it will be necessary that section 2 of chapter VI of the By-Laws of the Association be amended.

The Division of Drugs, Foods and Physical Therapy

The administrative Division of Drugs, Foods and Physical Therapy consists of the Council on Pharmacy and Chemistry, the Council on Foods, the Council on Physical Therapy and the A. M. A. Chemical Laboratory. In addition the administrative work of the Advisory Committee on Advertising of Cosmetics and Soaps is carried on in this division. A number of complex problems covering overlapping fields of the three councils have been considered by the Cooperative Committee on Policy, Rules and Procedure, representing all the groups of the division. This committee has expedited the handling of many questions and has removed the necessity of placing on a single council the burden of responsibility for interlocking questions. The creation of the division of Drugs, Foods and Physical Therapy has resulted in greater efficiency in carrying on routine activities, in obviating inconsistencies and in better correlation.

Council on Pharmacy and Chemistry

Each year the Council on Pharmacy and Chemistry has reported increasing interest on the part of the medical profession and increasing work on its own part. In 1937 a new high peak was reached in both particulars. The report of the Council's investigation of catgut sutures attracted widespread attention and apparently was instrumental in bringing about the introduction in Congress of a bill providing that the National Institute of Health, formerly the Hygienic Laboratory, should undertake the control and regulation of catgut sutures to insure sterility and high quality of such material. The Elixir of

Sulfanilamide-Massengill episode, discussed elsewhere under the heading of the A. M. A. Chemical Laboratory, also had great effect in causing greater interest in the Council's activities and in increasing its work. The reports on both the catgut sutures and the Elixir of Sulfanilamide incident have quickened the profession into a greater alertness to the possible dangers in the use of drug products that have been placed on the market without proper scientific investigation and without the establishment of necessary standards. So many communications have been received from physicians inquiring whether or not certain products were Council accepted or whether certain firms cooperated with the Council that it has not been possible to make prompt replies. Many institutions and individual physicians have removed from their shelves nonaccepted products. In the last three months of 1937 more approaches were made by firms with a view of obtaining Council acceptance than at any other like period. There is no doubt that more producers will endeavor to comply with the rules of the Council, in view of the increased support of the Council's work by physicians. It must be fully recognized that there are some manufacturers of products offered for therapeutic purposes that do not deserve the support of the profession. Whether or not such houses can exist under the increasingly intensive scrutiny of the medical profession waits to be seen. Certain it is that, as long as some physicians will support the crude type of products, the proprietary propaganda and the endeavor to foist commercial domination of therapeutics on the medical profession, just so long will these houses endeavor to avoid marketing their products honestly. It is gratifying, however, to note the number of new products or brands which have been submitted to the Council. One firm alone has signified its intention of submitting ninety-two products—practically all of an acceptable character—for consideration by the Council within the next few months. The difficult problem at present is how the executive force at headquarters can take care of increasing demands on the Council, not only in passing on drugs but in requests for advice and information from the physicians in active practice.

Representatives of a few firms whose method of doing business cannot receive recognition by the Council have in some instances made untrue representations that every doctor should challenge. These statements are to the effect that the Council charges a fee for examining drugs or that it "costs too much" to get a product passed by the Council or that it is necessary to take out so much advertising in THE JOURNAL before the Council will accept a product. Of course such statements are completely false. It has been reiterated again and again that since its inception the Council has never accepted, or permitted to be accepted, a cent of remuneration in any form for the consideration of products. The cost of the Council on Pharmacy and Chemistry, as well as that of the other councils, is borne entirely by appropriation made by the Board of Trustees of the American Medical Association. The Council is not influenced in the slightest by any proffer of advertising patronage and, if it knows of such a proffer, the firm is notified that it will have no effect on the Council's consideration. All members of the Council, with the exception of the Secretary, serve without remuneration. They give of their time willingly and unstintingly. As an expression of appreciation of their efforts, it is asked that the profession evaluate critically the Council's conclusions and lend support to its work in rationalizing therapeutics. If any unfair charges against the Council reach the ears of members of the profession, they should demand immediately that such charges be either substantiated or retracted.

PUBLICATIONS OF THE COUNCIL

New and Nonofficial Remedies.—The 1937 edition differed from previous editions because of the request of some manufacturers to have official products which have been granted the seal of acceptance listed on the same pages with proprietary accepted brands. Heretofore accepted brands of official products were merely listed in that department of New and Nonofficial Remedies entitled "List of Articles and Brands Accepted by the Council but Not Described." Two supplements to New and Nonofficial Remedies were issued as usual, one on August 1 and one on November 1, and sent to all who had purchased copies of the book. Frequently it is noted that physicians do not order the book annually but fall back on an old edition. This may lead to errors, because a product which stood accepted in 1930 may have been superseded by more valuable products developed since that date; further evidence might have indicated that claims made for a product should be restricted or that the tests and standards should be modified. New and Nonofficial Remedies is a current publication, the content of which is being constantly changed to keep in step with the rapid advancement of drug therapy. The number of copies of New and Nonofficial Remedies sold in 1937 was 5,003. The number should be much greater. In addition, 6,200 paper-bound copies were distributed, copies being sent to one class in each recognized medical school.

Epitome of the U. S. Pharmacopeia and National Formulary.—The new Epitome was printed early in 1936. However, the Pharmacopeia and the National Formulary adopted a new policy of issuing interim supplements and that made it necessary to revise the Epitome in 1937. The demand for the book has been such that further printings must be made in 1938. The number of copies sold in 1937 totaled 8,130.

Useful Drugs.—This little book containing a selected list of drugs has always enjoyed wide acceptance. One reason for this is that it is used in many medical schools; the other is that the book is never out of date. Early in 1937 a thorough revision was made of the 1936 edition. At the close of 1937 the manuscript had almost been completed for an entirely new edition, which will be off the press in the spring of 1938. This is the first edition of Useful Drugs in which the English name precedes the Latin name of the drug. The book is issued both in the regular pocket size and in an interleaved edition to meet the demand of teachers who desire their students to make notes alongside the text. The book not only is of service to teachers and students but is widely used as a reference guide by practicing physicians. The number of copies of Useful Drugs sold in 1937 was 6,495.

Glandular Physiology and Therapy.—The book Glandular Physiology and Therapy was issued at the close of 1935. Although there has not been opportunity for the book to be revised since then, the sale still continues; 2,065 copies were purchased in 1937.

A. M. A. Interns' Manual.—This book will be a radical revision of the publication previously known as Hospital Practice for Interns. Much has been done on the text throughout the year 1937 and the manuscript was sent to the printer the first part of January 1938. It is believed that the book will receive wide recognition not only by interns but by physicians in general. It will contain official statements from the Council on Medical Education and Hospitals concerning rules for interns; an epitomized statement concerning physical therapy, issued by the Council on Physical Therapy; a discussion of foods and nutrition as applied to the care of the sick, issued under the auspices of the Council on Foods, and a description of acceptable types of drugs, their dosages and indications, which come within the purview of the Council on Pharmacy and Chemistry. In addition, the Council has authorized the inclusion of tables and other data that may be of aid in diagnosis.

REPORTS OF THE COUNCIL

The Council has continued to advise the medical profession concerning the status of new drugs and an increasing number of reports are appearing each year discussing the status of various substances.

A filtrate used in the treatment of gonorrhea, having been the subject of two preliminary reports, was finally declared by the Council unacceptable, for lack of convincing evidence of its therapeutic value.

Soluble barbiturates for basal anesthesia received special consideration in the report on Evipal Soluble.

A report which has received wide recognition both in America and in Europe was that on "Histidine Hydrochloride versus Diet and Alkalis in Treatment of Peptic Ulcer."

Probably no product received more attention throughout the year than did sulfanilamide, on which the Council issued a number of reports and published the standards. Up to Jan. 1, 1938, nine brands of sulfanilamide had been accepted by the Council, all conforming to the rigid standards required.

A report on the standardization of digitalis products accepted for N. N. R. and the report on dosage of preparations containing vitamins A and D have been of aid both to manufacturers and to prescribing physicians.

For a number of years the Council has insisted on limitation of the claims for the therapeutic value of Aminophylline. In its report in 1937 the Council declared that in view of accumulated evidence it could no longer recognize claims for Aminophylline for the relief of pain in angina pectoris; that claims could be made only for its use as a mild myocardial stimulant and as a diuretic.

Certain manufacturers were placing high potency vitamin D preparations on the market, particularly recommending their use in the treatment of arthritis. The Council rejected these products and pointed out the lack of any worthwhile evidence to support the claims.

The Council also ruled out the use of hydroquinone as a stabilizing agent in acceptable liver oil preparations containing vitamin A.

The Council declared unacceptable an oral vaccine for the treatment of colds.

The proprietary product "Edwenil" has been promoted to the medical profession with highly bombastic claims. An investigation undertaken under the auspices of the Council brought to light statements made by the manufacturer believed to be entirely unwarranted.

For years Avertin has been before the Council. A preliminary report was issued by the Council in 1930. After much consideration by the Council and the manufacturer, an agreement was made that the other active ingredient in the product, known as Avertin Fluid, would be declared in the name and that thereafter the product would be known as Avertin with Amylene Hydrate. The product was therefore standardized, the claims were restricted, and Avertin with Amylene Hydrate is now described in New and Nonofficial Remedies.

Early in the year the Council made a preliminary report on mandelic acid and at a later date, after further confirmatory evidence had been received, accepted the product.

One of the drugs of lively current interest is Benzedrine Sulfate. An extensive report was published by the Council on the status of this product for which there has been great demand.

The foregoing is a brief summary of just a few of the numerous reports published.

The Council found it necessary to coin a number of nonproprietary names throughout the year, such as Sulfanilamide for para-amino-benzene-sulfonamide, introduced in this country under the proprietary name of Prontylin, Riboflavin for the product previously known as vitamin B_2, and Thiamin Chloride for the crystalline substance representing the hydrochloride of vitamin B_1.

In cooperation with the Council on Foods, the Council on Pharmacy and Chemistry has kept in close touch with the vitamin situation. During 1937 a large number of authorities in the field were selected to write articles dealing with vitamins for the purpose of publication in THE JOURNAL. With a few exceptions these articles were all in type by the first of the year and, by the time this report appears in print, the series will be well under way. The plan is similar to that used for the articles on glandular therapy. After the vitamin articles have been published, the authors will be asked to reedit them for issuance in book form. The conceptions of vitamins are changing rapidly, giving rise to unavoidable confusion. These articles should do much to clear up the confused state so far as the application of drugs to problems of therapy is concerned and will constitute a most valuable source of authoritative information. The articles are being edited under the supervision of Dr. F. C. Bing, Secretary of the Council on Foods.

In this connection it may be pointed out that pure chemical substances are taking the place of indefinite mixtures. For instance, the Council on Pharmacy and Chemistry has accepted such pure substances as Carotene, which is a precursor of vitamin A; Cevitamic Acid, which is a crystalline vitamin C; Thiamin Chloride, which is a crystalline form of vitamin B_1; Riboflavin, the pure substance previously known as vitamin B_2; and it has under consideration Nicotinic Acid and Nicotinic Acid Amide, which are parts of the vitamin B complex. Standards have also been drawn up by the A. M. A. Chemical Laboratory for one of the crystalline vitamin D substances. A number of years ago the Council stated that the polypharmaceutical vitamin mixtures are unscientific and that there is no more reason for combining all the vitamins in a shotgun mixture simply because of their names than there is for combining all the other forty or so essential dietary ingredients. The fact that pure crystalline substances are now being made available indicates anew the value of treating disease conditions with definite substances which may be given in carefully controlled doses. The history of the vitamins and the discovery of the pure substances is not much different from the history and isolation of active principles from alkaloidal-containing plant extracts. The promulgation of unessential products under catchy names indicating their alphabetical vitamin content or the presence of so-called synergistic actions or "plus vitamin" effect is an insult to the intelligence of American physicians.

PROBLEMS BEFORE THE COUNCIL

The problems before the Council are so difficult, require so much background of experience and are so numerous that they cannot be adequately discussed in the brief space of a report. Nomenclature still looms large. The problem of nomenclature may require most extended study in the near future in view of the recent court decision involving the wax paper or "cellophane decision." If the decisions which have now been made are upheld in the Supreme Court, the extensive manner in which proprietary names are now used will require much consideration.

The acceptance of endocrine principles has occupied a large portion of the Council's time and a number of products, such as Theelin, also known as Estrone, Theelol—also known as Estriol, Profoliol Benzoate, and several other substances—are under consideration.

MEMBERSHIP OF THE COUNCIL

The Council lost none of its active members during 1937 either by resignation or by death. It did, however, suffer the loss of two former members of the Council who had much influence in its formation. Dr. Julius Stieglitz, former vice chairman of the Council and chairman of its Committee on Rules and Procedure from the inception of the Council in 1905 to the time of his resignation in 1924, died Jan. 10, 1937. It need only be mentioned that the rules of the Council today remain much the same as those formulated under the direction of Dr. Stieglitz during the early history of the Council. Dr. Stieglitz was a forceful member, recognized as a foremost authority in chemistry. After his resignation in 1924 Dr. Stieglitz maintained an active interest in the work of the Council.

Dr. George H. Simmons, Editor Emeritus of THE JOURNAL, was chairman of the Council from the time of its inception until March 1927. He continued as an active member of the Council and in February 1935 was appointed an honorary life member, in which capacity he served until his death on Sept. 1, 1937. The Council on Pharmacy and Chemistry was formed at the instigation of Dr. Simmons. Through his far sightedness, his militant editorship and his encouragement of absolute scientific integrity, the Council was able to carry on during the early years when it encountered much opposition. Today the record of the Council on Pharmacy and Chemistry as well as that of other departments of organized medicine stands as a monument to Dr. Simmons. Even to the time of his death Dr. Simmons received the weekly transactions of the Council and took part in discussions in which he was interested. His advice, wise counsel and camaraderie are greatly missed by his former colleagues. As stated in the published resolutions of the Council: "In his death the Council has lost a member of unique value; the medical profession a servant who served it faithfully."

The following members of the Council were reelected in 1937 to serve a five year period: Dr. E. M. K. Geiling, Dr. W. W. Palmer and Dr. S. W. Clausen.

Summary

Through the creation of a Division of Drugs, Foods and Physical Therapy, composed of the Council on Pharmacy and Chemistry, the Council on Foods and the

Council on Physical Therapy, it has been possible to effect closer correlation of the work of these three councils and to enhance administrative efficiency.

The work of the Council on Pharmacy and Chemistry has been greatly increased during the last year, partly because of the submission of a large number of products by manufacturers who have not heretofore cooperated with the Council and because of the nature of investigations to be made, and for the further reason that the activities of the Council are apparently being more fully supported by the medical profession generally.

The publications of the Council have been kept up to date as fully as possible and have been changed in form and scope in such manner as has been necessary to keep them abreast of scientific advancement. An important series of articles dealing with vitamins, prepared by highly qualified investigators, are being published under the auspices of the Council, and these articles will later appear in book form.

The endocrine principles and new therapeutic substances of various kinds have required prolonged and intensive consideration. Many problems requiring the attention of the Council are of more complex nature than heretofore because of refinement of chemical processes, improvement in the thoroughness of clinical and laboratory investigations, the tendency toward specificity, the necessity for establishing standards and other factors of major importance.

There are still some manufacturers of products offered for therapeutic use who do not employ the necessary methods of investigation and check to insure either the purity or the usefulness of their products, but the continued use of such products cannot be sustained except as they are employed as therapeutic agents by members of the medical profession in their daily practice. The efforts of the Council on Pharmacy and Chemistry to establish rationalism in therapeutics deserve and should have the fullest support from all members of the medical profession.

Through the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry, grants have been made for the support of scientific investigations conducted by qualified investigators whose projects have been approved by the committee, and some very valuable reports have been published.

Council on Physical Therapy

Among the noteworthy accomplishments of the Council on Physical Therapy during the past year have been the establishment of standards for acceptable audiometers, the investigation of hearing aids, the examination of short wave diathermy apparatus, the advancement of the Council's educational activities and a wider distribution of information on physical therapy. As usual, a large part of the time of the Council has been devoted to advising the profession about the status of apparatus.

EDUCATIONAL ACTIVITIES

Gratifying results of the educational program under the direction of the Council are shown by the increased number of inquiries concerning graduate courses in physical therapy and teaching outlines for such courses from deans of medical schools. Requests for aid in planning physical therapy departments, continued requests for instructional films and inquiries concerning accepted and rejected apparatus have been given careful attention. The Council on Medical Education and Hospitals has lent encouragement to this educational program.

It has been the aim of the Editorial Committee and the Committee on Education of the Council to acquaint the rank and file of the medical profession with the value of physical therapy, particularly of simple measures: heat, light and massage. This has been done largely by the publication of articles, by lectures and by exhibits in addition to other educational activities. Besides reports concerning acceptable and nonacceptable apparatus, other reports have appeared in THE JOURNAL setting standards for certain physical therapy equipment, such as "Minimum Requirements for Acceptable Audiometers," "Evidence Required by the Council on Physical Therapy for Consideration of Apparatus Used in Fever Therapy", "Status of Diathermy and Short Wave Diathermy" and "Physical Therapy in Hospitals With Fifty or More Beds." Adopted articles have appeared in THE JOURNAL on "Physical Therapy in Infantile Paralysis" and "The Present Status of Short Wave Diathermy." A section on "Physical Therapeutics" has been prepared and is being included in the next edition of the Handbook for Interns. The supply of the second edition of the Handbook on Physical Therapy has been exhausted and a revision is scheduled. The booklet "Apparatus Accepted" is to be revised and made much larger.

Other educational activities of the Council include work with state and county medical societies, such as arrangement of programs, presentation of papers stressing the value of physical therapeutic measures, planning exhibits and lending films. Outworn films will be replaced as soon as possible. During the year the Council sponsored six exhibits in cooperation with the Committee on Scientific Exhibit of the American Medical Association, including one at Atlantic City. In this exhibit a series of lectures was given on the fundamental physical principles employed in electrical apparatus used for therapeutic purposes, short lectures were given on the use of physical agents, and a report of research was sponsored by the Council.

Because of an increased demand for instructional material, a suggested outline of lectures on physical therapy has been prepared and made available to deans of medical schools. Progress in this field is noted by the establishment of several graduate courses in physical therapy with fellowships.

INVESTIGATION OF APPARATUS

Evidence of the closer cooperation between manufacturers and the Council is indicated by the withdrawal from the market of certain devices that have been declared nonacceptable, although in many cases the reports were not published. In some instances new units have been designed to meet Council requirements, and in others existing devices have been changed to conform with suggestions of the Council. Manufacturers are being impressed with the necessity of presenting advertising copy to the Council for criticism and suggestions prior to publication of the report, thus eliminating many misleading advertising claims and bringing about better standards in physical therapy. The submission of a wider range of therapeutic and diagnostic equipment shows the growing importance placed on the Council's seal of acceptance.

More short wave diathermy units have been considered than any other type of equipment, with ultraviolet radiation devices next in number. Other types of products considered are air filters, anesthetic apparatus, audiometers, hearing aids, bandages, fever cabinets, sterilizing outfits, insufflators, and a variety of equipment for oxygen therapy including regulators, rebreathing outfits, nasal catheters, face tents and humidifiers. Owing to the number of devices considered, there is an ever increasing volume of correspondence passing through the secretary's office.

SPECIAL INVESTIGATIONS

Audiometers.—A joint meeting of manufacturers of audiometers and hearing aids and a group of otologists appointed by the Council was held, at which many interrelated problems were discussed and agreements reached that aided in the formulation of regulations for acceptable audiometers. The expert advice given by the consultants contributed much in paving the way toward standardization of these instruments. Although this work is not completed, the progress made thus far indicates that these studies will be of great benefit to many thousands of persons with defective hearing. "Tentative Minimum Requirements for Acceptable Audiometers" were published in THE JOURNAL. The National Bureau of Standards, the American Society for the Hard of Hearing and the American Standards Association have rendered the Council valuable assistance in considering audiometers and hearing aids.

Research.—Five grants were awarded to aid in research during the past year. These grants are available to competent investigators who make application and who, in the opinion of

the Committee on Scientific Research of the Council on Physical Therapy, have problems of merit. Six articles were published by the recipients during the past year, reporting on research made possible by these grants.

Radiation.—There is not at present sufficient critical evidence available to substantiate the value of radiation from the mercury glow lamp in the prevention and cure of rickets in children nor are there critical data to support the claims made for bactericidal action of ultraviolet radiation in vivo, although evidence shows that cultures of bacteria may be made sterile by ultraviolet irradiation in Petri dishes. Consequently the Council is giving careful consideration to both problems. An attempt might well be made to establish standards of equivalents for chemical substances and radiant energy, particularly ultraviolet.

The investigation of radium and radon seeds has progressed satisfactorily. It is expected that reports will be made available to the profession during the coming year.

Although no reports have been published, the Council is going forward with the consideration of x-ray equipment.

Ophthalmic Devices.—Consultants on ophthalmology, appointed by the Council, have given consideration to ophthalmic equipment for which therapeutic and diagnostic claims are made. The consultants have rendered valuable service and undesirable instruments and equipment have been withdrawn from the market as a result of their efforts.

Fever Therapy Apparatus.—A Committee on Hyperpyrexia, appointed by the Council, formulated certain requirements in relation to fever therapy equipment, and its conclusions were published in THE JOURNAL under the heading "Evidence Required by the Council on Physical Therapy for Consideration of Apparatus Used in Fever Therapy."

Summary

The principal achievements of the Council on Physical Therapy during the past year have been the establishment of standards for acceptable audiometers, the investigation of hearing aids, the examination of short wave diathermy aparatus and the advancement of the Council's educational activities with a wider distribution of information on physical therapy.

Under the auspices of the Council, a joint meeting of representatives of manufacturers of audiometers and hearing aids with Council appointed consultants paved the way for a more prompt agreement on standards for acceptable audiometers and facilitated better understanding of interrelated problems. The cooperation secured from the manufacturers of these devices is most gratifying to the Council.

Beneficial results of the educational program launched several years ago are now being noted, though much remains to be done.

As usual the Council has continued with its investigation of and reporting on apparatus submitted for the purpose, and in some instances it has investigated and reported on products not presented. The consideration of short wave diathermy apparatus has predominated in the Council's investigating activities.

Research grants awarded to investigators presenting problems of merit have reaped gratifying results and several excellent articles have been published.

Council on Foods

During 1937 the efforts of the Council on Foods to promote truthful advertising of wholesome food products continued unabated. It is gratifying to report that many producers have continued to accord the Council their full cooperation in this work. Much of this labor may go unrecognized because it consists of the elimination of misleading health claims before they appear in advertising directed both to the medical profession and to the public. The importance of the constant efforts of the Council in this connection scarcely can be evaluated, but review of advertising is only one phase of the Council's activities.

The demands made on the Council's facilities are increasing constantly and, of course, the demands on the time of the individual members of the Council are increasing likewise. Matters given consideration during the year have included such diverse questions as the claims made for "one formula preparations" used in feeding infants, the nutritional value of the proteins of milk, the dietary significance of fruit juices, and many others which have been reported from time to time in THE JOURNAL. The problem of lead in foods received particular attention, and from a review of the evidence obtainable it was concluded that the products standing accepted by the Council contain either no lead or minute traces which are of no known hygienic significance. This question is important and is being investigated further. Another topic considered was the difficult question of how foods can be rated as sources of the dietary essentials. A suggested procedure for judging the value of foods as excellent, good or fair sources of the different dietary factors has been published.

REPORTS OF THE COUNCIL

The Council has been in a unique position with regard to having information on the commercial preparation of many food products. This information has been utilized, along with other facilities of the Council, in the preparation of informative reviews on the nutritional value of foods and interpretations of evidence available in the literature with regard to nutritional problems. General reports have been published on a number of subjects and a brief review of some of them follows:

The theory has been advanced in some quarters that cereal products contain a toxic decalcifying substance and, in order to overcome the effects of this hypothetic factor, it would be well to fortify cereals with a calcifying substance such as vitamin D. After reviewing available evidence, the Council concluded that there is no good evidence for the existence of this hypothetic toxamin. Hence there appears to be no necessity at the present time to fortify cereal products intended for general human consumption with vitamin D in order to overcome the effects of an alleged toxic factor.

Dextrose is the normal sugar of the blood and studies of its physiologic importance have been made since the days of Claude Bernard. Recent commercial developments have led to the production and marketing of pure dextrose at a comparatively low price. This sugar, therefore, has become widely used both as a food itself and as an ingredient of manufactured food products. Comparative claims have led the Council to review and to evaluate the available evidence on the place of dextrose in the diet of normal persons. It is considered that dextrose is well utilized as a food but that it possesses no practical advantages over many other carbohydrates in combating ketosis produced by either a ketogenic diet or in early stages of fasting. Contrary to some claims, dextrose itself does not have unique advantages when administered by mouth in the prevention or relief of fatigue or in the maintenance of muscular efficiency. Considerations of allowable claims for dextrose appear in the full report.

Another report summarized available information on the production and properties of milks which produce a soft curd. An attempt was made to evaluate the nutritional significance of these milks, particularly in the feeding of infants. The Council concluded that pasteurization has little effect on the nature of the curd but that softening of the curd may be accomplished by boiling, dilution, addition of acids or alkalis, addition of various cereal waters, removal of some of the ionizable calcium, homogenization, evaporation or drying; and that, in general, digestion in the stomach of milk with a low curd tension is more rapid than the digestion of milk which does not have this property.

Strained fruits and vegetables are useful for infant feeding because of their physical texture, nutritive properties and their psychologic value in teaching the infant at an early age to receive food from the spoon and to accept a variety of flavors and textures. Strained foods usually may be fed between the fourth and the sixth month, though this is a question for the physician to decide, as is the matter of replacing such products with coarser foods. In this report the Council also states that home strained foods properly prepared are fully as nutritious as commercial products.

Another report of the Council provides a brief survey of available evidence relative to the usefulness of fresh apples and preparations of dried and powdered apples in the dietary treatment of diarrhea in infants and small children. There is evidence that the apple is effective in the treatment of such conditions, though the mechanism responsible for the reported success is not clear. The Council emphasizes that the use of the apple or preparations of the apple does not preclude the necessity of other measures such as parenteral administration of fluids when indicated, the careful selection of a suitable transition diet, and competent pediatric supervision.

There has been considerable discussion of the merit of spinach as a food. In a review of published reports from scientific and medical literature, the Council concluded that spinach should be regarded as a wholesome and valuable food. Spinach is a rich source of vitamin A and contributes vitamin C, iron and roughage to the diet. The evidence shows that the iron of spinach is not wholly available, nor is it a good source for infants in amounts which they can digest. The calcium is not utilized because it is present largely in the form of insoluble calcium oxalate.

GENERAL DECISIONS

In its report on vitamin D milk, the Council stated, "For the present milk is the only common food which will be considered for acceptance when fortified with vitamin D." This decision now has been amended by the Council so that milk products which are used in the same manner and for the same general purposes are included under the term "milk." This means that not only fluid milk but evaporated milk, dried milk, dried skimmed milk and flavored milk drinks prepared from whole or skimmed milk (provided the volume of milk in the prepared drink is at least 80 per cent of the total volume) will be eligible for acceptance when fortified with vitamin D.

The Council has been insisting that its seal does not constitute recommendation of any food product. Manufacturers of some accepted products have been using a statement on their labels such as "Recommended as a carbohydrate supplement to milk in infant feeding." The Council considered that this statement constitutes an infraction of its rules, particularly when the phrase "recommended for" appears in close association with the seal of the Council. Firms have been informed that substitute phrases such as "suitable for," "useful for" or "adapted to" might be used in place of the phrase "recommended for."

GENERAL POLICIES

Two years ago it was decided that the facilities of the Council should be conserved by acceptance of only those food products which seem to require attention. In 1936, carbonated beverages and the syrup bases from which some of them are made, breads and other ordinary bakery products were included in the "exempted list" because it was believed that there was no longer a need to act on them. During the past year, "exemption" without prejudice to the products themselves has been extended to cover a number of other food products. Foods falling in the foregoing category and having nutritional value beyond that of ordinary products, or which are promulgated with special claims, will be considered and reported on by the Council when such action is considered desirable. Manufacturers that have cooperated with the Council are being given every possible consideration in the matter of disposal of labels and advertising bearing the seal of acceptance.

MEMBERSHIP AND CONSULTANTS

During the year the terms of membership of Dr. Mary Swartz Rose and of Dr. Philip C. Jeans expired and they were reelected by the Board of Trustees to serve another period of five years.

Among the persons called on as consultants during the year, the services of the following are gratefully acknowledged: Dr. Henry C. Eckstein, Dr. H. J. Fisher, Miss Mary A. Foley, Dr. Ramon F. Hanzal, Dr. Elmer N. Nelson, Dr. Genevieve Stearns, Dr. William C. Rose, Dr. Grace MacLeod, Dr. Margaret Hessler Brookes, Miss Ruth Blair, Dr. Evelyn G. Halliday and Dr. Henry C. Sherman.

Summary

The efforts of the Council on Foods to promote truthful advertising of wholesome food products and to develop scientific progress in the field of nutrition have been carried on intensively. There is a constantly increasing demand on the services of the Council and an earnest effort has been made to meet the demands as fully as possible.

The Council has given careful and thorough consideration to a large number of important problems, some of which have lately developed, and has published numerous reports dealing with matters of varying nature that have demanded official attention. It has been necessary in order to conserve the facilities of the Council to exempt many products that were formerly considered.

The Council on Foods has had the benefit of the services of a number of distinguished scientists, who have cooperated in the study of numerous scientific questions and who have given able assistance in conducting necessary scientific investigations.

The Chemical Laboratory

An achievement of the A. M. A. Chemical Laboratory in 1937 was the investigation of Elixir of Sulfanilamide-Massengill. While the work was done under the auspices of the Laboratory, the facilities of the Council on Pharmacy and Chemistry were utilized, and, since the Laboratory is a unit of the headquarters' administrative Division of Drugs, Foods and Physical Therapy, there was close cooperation between them. Although the story of the Elixir of Sulfanilamide incident is well known by this time, certain observations are in order. The Laboratory determined the composition of the Elixir of Sulfanilamide; it analyzed specimens which had been used by patients who had died, specimens obtained on the open market and the contents of a gallon bottle ordered directly from the manufacturer. As soon as the composition was determined, "synthetic" and "modified synthetic" mixtures were prepared. These were then turned over to Dr. E. M. K. Geiling and his collaborators of the Department of Pharmacology of the University of Chicago, who tested them along with sulfanilamide alone and with the Elixir itself. Experimental animals had the same symptoms and died within approximately the same time as the patients, whether given the "Elixir of Sulfanilamide" or the solution containing the diethylene glycol in similar amounts. Necropsies were reported by Dr. Paul R. Cannon of the Department of Pathology of the University of Chicago on animals which had been so killed, and these in turn were compared with sections of kidneys and livers from patients who had succumbed. There was close cooperation with the Food and Drug Administration of the federal government, which did excellent work in tracing all shipments which had been placed on the market. As soon as the government inspectors reported deaths, the headquarters office of the American Medical Association was notified and contact was immediately established by telephone or telegraph with the physicians concerned. Seventy-six deaths were confirmed in this manner. In addition, fifteen or twenty deaths of patients who took the Elixir were reported but it was not definitely established that this drug was exclusively responsible or, in some cases, confirmatory evidence could not be obtained.

Within a week after the first report of poisonings was received, the Laboratory had completed analytic tests and Dr. Geiling and his co-workers had made sufficient tests on animals to show that diethylene glycol was toxic in the amounts given. As soon as the essential facts were established, public announcement was made through the lay press as well as through scientific publications. The entire problem was solved in less than two weeks after the first sample of the product at fault was received by the Laboratory. This illustrates anew the value of the organization maintained by the Association, including trained chemists who may be assigned to emergency problems immediately; splendidly qualified advisers, who put aside everything to push through this work so that an early report might be made; THE JOURNAL with a policy of militant editorship and an organized method of giving

out news; the Board of Trustees, which provides funds and equipment to make possible prompt and effective action in dealing with emergencies. The reports were made available to the medical profession in record-making time. This situation, tragic as it was, has served as an excellent opportunity of bringing home to Congress and to the public the necessity for an effective food and drug act. Already, legislation has been introduced in both houses of Congress to forestall similar tragedies. Appreciative acknowledgment is made to the Tulsa group of physicians who first brought the matter to the attention of the Laboratory and whose report on clinical and pathologic observations aided the work in Chicago. Acknowledgement is also made to other physicians in various places. Dr. O. E. Hagebusch of St. Louis contributed a fine pathologic report. Dr. Geiling with his associate, Julius M. Coon, and Dr. Paul R. Cannon gave unstintingly of their time while investigations were under way. Thanks are also due to their colleagues in the biologic science group of the University of Chicago. Dr. E. K. Marshall Jr. and Dr. J. Howard Brown of Johns Hopkins University aided in the problem. Special recognition is due Mr. W. G. Campbell and Mr. J. O. Clarke of the Food and Drug Administration, who directed the spendid work done by that agency. The members of the A. M. A. Chemical Laboratory staff who worked on this problem were Dr. E. W. Schoeffel, Dr. H. R. Kreider and Dr. J. B. Peterson. Dr. Schoeffel deserves special mention because of the prodigious amount of work he did with a minimum amount of rest. The Board of Trustees at its November meeting expressed its appreciation by a formal vote of thanks.

GENERAL ACTIVITIES

The work of the Laboratory during the year included establishing standards, among other products, for Cobefrin Hydrochloride, Novatropine, Propadrine Hydrochloride, Effervescent Calcium Gluconate, Benzedrine Sulfate, Sulfanilamide, Riboflavin, Thiamin Chloride (Vitamin B_1 Hydrochloride), Gitalin, several endocrine principles which were standardized for the first time, Avertin with Amylene Hydrate, Mecholyl, Silver Picrate, and bismuth preparations. The Laboratory has also analyzed several products which were the subject of reports by the Bureau of Investigation and has carried out a mass of routine work.

Members of the Laboratory staff appeared before scientific societies, either discussing work done by the A. M. A. Chemical Laboratory or giving lectures of a popular character. Papers are in preparation or have been submitted to journals dealing with the comparative analysis of crystalline preparations containing insulin—probably insulin zinc. Another paper deals with the standardization of Thiamin Chloride, wherein the chemical method is described as a substitute for the old method of biologic assay while another deals with the chemical determination of glycol and glycol ethers. A paper describing the A. M. A. Chemical Laboratory, particularly its microscopic and spectroscopic facilities, has been published in the analytic edition of *Industrial and Engineering Chemistry*. A motion picture prepared by A. M. A. chemists, illustrating certain microchemical technic and the use of other laboratory apparatus, has been used by a number of societies in order to follow this work.

The laboratory has also prepared book reviews, answered inquiries and cooperated with THE JOURNAL and other departments of the Association.

Summary

An important accomplishment of the Chemical Laboratory in the past year resulted from investigations of the poisonous effects of a product known as Elixir of Sulfanilamide. These investigations were made with the aid of the Council on Pharmacy and Chemistry, of members of the scientific staff of the University of Chicago, of members of the Food and Drug Administration of the Department of Agriculture of the federal government, and of individual physicians. It was clearly established that at least seventy-six deaths were due to the use of this product and that the toxic agent involved was diethylene glycol.

Much work was done by the Laboratory during the year in establishing standards for important therapeutic products. The usual laboratory investigations of products submitted by the Council on Pharmacy and Chemistry and those submitted by the Bureau of Investigation were conducted. Members of the Laboratory staff have contributed to the programs of several important scientific societies during the year, and papers presented have been published. Members of the staff have also participated in educational programs before public audiences. A motion picture pertaining to the work of the laboratory has been shown before a number of scientific groups.

Council on Industrial Health

In accordance with instructions received from the House of Delegates at the Atlantic City session in 1937, the Board of Trustees has established a Council on Industrial Health with the following official personnel: Dr. Stanley J. Seeger, Chairman, Milwaukee; Dr. Harvey Bartle, Philadelphia; Dr. L. D. Bristol, New York; Dr. Warren F. Draper, Washington, D. C.; Dr. Leroy U. Gardner, Saranac Lake, N. Y.; Dr. Morton R. Gibbons, San Francisco; Dr. H. H. Kessler, Newark, N. J.; Dr. A. J. Lanza, New York; Dr. A. D. Lazenby, Baltimore; Dr. Earl D. Osborne, Buffalo; Dr. C. W. Roberts, Atlanta, Ga.; Dr. C. D. Selby, Detroit, and Dr. Carl M. Peterson, Secretary, Chicago.

The Board of Trustees had recognized the need for establishing measures whereby the American Medical Association might be in position to aid in the solution of important problems that have arisen in the field of industrial health. The Section on Dermatology and Syphilology had interested itself intensively in the study of industrial dermatoses and had adopted a report of a special committee of the section asking for the cooperation of the Association in the establishment of a clearing house for the accumulation and recording of information on industrial dermatoses.

In March 1937 the Board of Trustees invited a relatively large group of physicians who were known to have had wide experience in the field of industrial health to participate in a conference at the Association's offices. The discussions at this conference, which occupied an entire day, dealt with many important problems, and it was the unanimous opinion of the consulting group that the American Medical Association should establish the Council on Industrial Health. At the Atlantic City session in June 1937 the Board of Trustees was authorized by the House of Delegates to proceed with organization of the Council as a standing committee of the Board of Trustees.

The Council on Industrial Health held its first meeting on Dec. 10, 1937, at which consideration was given to the details of organization and to a discussion of the possible functions that might be assumed and of the scope of work to be undertaken. Committees were appointed to report at a later meeting of the Council, which was held in Chicago on March 26, 1938. At the second meeting, as the result of recommendations submitted by these committees, plans for the initial activities of the Council were adopted. These plans involve investigations of present activities in the field of industrial health on the part of various groups and organizations, including governmental agencies, industries, labor organizations and other interested groups.

It is the intention of the Council on Industrial Health to establish and to maintain official contact with constituent state medical associations. These associations will be requested to create committees on industrial health to cooperate with the Council in the study of problems with which that body may be properly concerned, in compiling information and in developing methods and measures that may enable the American Medical Association to make helpful contribution toward the solution of these important problems.

The Council hopes that it will be possible to arrange for an annual conference on industrial health to be held in Chicago. Committees were appointed to undertake the preparation of special articles that may be published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. The Council on Industrial Health will endeavor to establish close cooperative effort with the Council on Medical Education and Hospitals for the purpose

of promoting graduate facilities in the field of industrial health. One committee is engaged in the important task of studying nomenclature, and this committee will attempt to lay the ground for a standard nomenclature in the particular field with which the Council is concerned. Another important activity of the Council will be concerned with a study of those provisions of compensation laws which may have a direct bearing on industrial health.

The office of the Council on Industrial Health is located in the Association's building at 535 North Dearborn Street, Chicago, under the immediate direction of Dr. Carl M. Peterson, Secretary of the Council.

Summary

The Council on Industrial Health, organized in December 1937, has held two official meetings and has developed a working organization through the appointment of a secretary and the creation of official committees. Articles dealing with various subjects of major importance in the field of industrial medicine are in course of preparation for publication. The Council has adopted official rules and is proceeding as rapidly as possible, with due conservatism, toward the prosecution of plans that have been officially adopted.

Advisory Committee on Advertising of Cosmetics and Soaps

The Advisory Committee on Advertising of Cosmetics and Soaps was organized during the past year. It has issued only one statement but has considered quite a number of cosmetic preparations which THE JOURNAL has been asked to advertise in its pages. Firms have been given a liberal amount of time in which to revise advertising. The number of members on the Committee has been increased from three to five, with two ex-officio members in addition. The Committee plans to issue reports during 1938 and hopes at an early date that the preliminary work will have progressed to such an extent that reports may be made on all the cosmetic products which are submitted to THE JOURNAL.

Bureau of Legal Medicine and Legislation

FEDERAL LEGISLATION

Except where otherwise indicated, the following report on federal legislation speaks as of March 24, 1938. The legislation discussed includes some that was pending in the first session of the Seventy-Fifth Congress when the House of Delegates last met, some that was introduced during the special session that followed, and some introduced in the third session that convened in January and at present writing is still continuing. An effort has been made to bring the information as nearly up to date as is practicable, regardless of the calendar year covered by other portions of this report.

An analysis of the laws passed during the first and special sessions of the Congress and of the bills pending when the second regular session convened, Jan. 3, 1938, was published in the January 15 and 22 issues of THE JOURNAL.

Federal Health Insurance.—S. Res. 143, a resolution introduced by the former Senator Black of Alabama, would authorize the Senate Committee on Education and Labor "to make a full and complete investigation in order to determine the best and most effective kind of Federal legislation to provide a national public-health policy throughout the entire United States and to report to the Senate as early as practicable the recommendations outlining the kind of legislation it is believed will most effectively accomplish this purpose." This resolution is still before the Committee on Education and Labor, to which it was referred.

S. 855, introduced by Senator Capper of Kansas, is entitled "A Bill to aid in alleviating the loss caused by sickness." This bill proposes the establishment of a federal system of health insurance and is patterned after the so-called Epstein health insurance bill. It was referred to the Senate Committee on Finance. It is still before that committee.

S. J. Res. 188, introduced by Senator Lewis of Illinois, is a resolution "to provide medical aid for the needy and the stricken with illness who are unable because of poverty to provide treatment and hospitalization; also to establish all licensed medical practitioners as civil officers of National Government." This resolution was referred to the Senate Committee on Finance, where it still is.

H. R. 8237, introduced by Representative Voorhis of California "to provide for the general welfare by establishing a Cooperative Home Board and a system of Cooperative Home Associations," proposes that the Public Health Service will supply and supervise the medical service needed by members of the proposed associations and supervise the sanitary facilities of their homes. It was referred to the House Committee on Banking and Currency, where it still is.

H. R. 9847, introduced by Representative Treadway of Massachusetts, by request, proposes to establish a national system of health insurance. This bill was introduced as late as March 14, 1938. It was referred to the House Committee on Interstate and Foreign Commerce and is still in that committee.

H. Res. 452, submitted March 28, by Representative Scott, California, contemplates the creation of a special House committee to investigate the activities of the American Medical Association, state and county associations and the Medical Society of the District of Columbia in connection with Group Health Association, Inc., of the District of Columbia. The resolution was referred to the House Committee on Rules.

Federal Health Activities and Subsidies.—Health Activities Generally: H. R. 4475, introduced by Representative Voorhis of California, proposes "to increase authorization of appropriations for Public Health Service under the Social Security Act." This bill would increase the appropriation for aid by the United States Public Health Service to states, counties, health districts and political subdivisions from $8,000,000 annually to $20,000,000 annually and to increase the appropriation for the Public Health Service annually from $2,000,000 to $5,000,000, for investigation of disease and problems in sanitation, in accordance with the terms of the Social Security Act.

Cancer: S. 2067, a bill entitled "A Bill authorizing the Surgeon General of the Public Health Service to control and prevent the spread of the disease of cancer," was introduced April 2, 1937, by Senator Bone of Washington, on behalf of himself and ninety-four other senators, out of a total senate membership of ninety-six. A companion bill, H. R. 6100, was introduced in the House of Representatives by Representative Magnuson of Washington.

Another cancer bill was introduced, H. R. 6767, by Representative Maverick of Texas, a bill "to promote research in the cause, prevention, and methods of diagnosis and treatment of cancer, to provide better facilities for the diagnosis and treatment of cancer, to establish a National Cancer Center in the Public Health Service, and for other purposes."

H. J. Res. 428, relating to cancer, was introduced by Representative Hunter of Ohio, a joint resolution "to provide for the establishment of a National Health Center, as a permanent memorial to Thomas Jefferson, for the purpose of promoting research in the cause, prevention, and methods of diagnosis and treatment of cancer; to provide better facilities for the diagnosis and treatment of cancer; to establish a National Health Center in the Public Health Service; and for other purposes."

All these bills and the joint resolution were made the subject of a hearing before a joint meeting of a subcommittee of the Senate Committee on Commerce and a subcommittee of the House Committee on Interstate and Foreign Commerce. As a result there was evolved An Act to provide for, foster, and aid in coordinating research relating to cancer; to establish the National Cancer Institute; and for other purposes, which was approved by the President Aug. 5, 1937, and became effective thirty days later. The act is referred to as the National Cancer Institute Act. It established in the Public Health Service a division known as the National Cancer Institute, under the direction of the Surgeon General of the Public

Health Service and a National Cancer Advisory Council appointed by him. The Council is authorized—

(*a*) To conduct, assist, and foster researches, investigations, experiments, and studies relating to the cause, prevention, and methods of diagnosis and treatment of cancer;

(*b*) To promote the coordination of researches conducted by the Institute and similar researches conducted by other agencies, organizations, and individuals;

(*c*) To procure, use, and lend radium as hereinafter provided;

(*d*) To provide training and instruction in technical matters relating to the diagnosis and treatment of cancer;

(*e*) To provide fellowships in the Institute from funds appropriated or donated for such purpose;

(*f*) To secure for the Institute consultation services and advice of cancer experts from the United States and abroad; and

(*g*) To cooperate with State health agencies in the prevention, control, and eradication of cancer.

The act authorized an appropriation not to exceed $750,000 for the erection and equipment of a suitable and adequate building and facilities for the use of the institute and the appropriation annually of $700,000 for the purpose of carrying out the provisions of the act.

The establishment of the National Cancer Institute, however, did not check proposals on behalf of cancer sufferers. H. R. 8564, introduced by Representative Towey of New Jersey, since deceased, proposes "to establish a national foundation for the purpose of promoting research into the cause, prevention, methods of diagnosis and treatment of cancer, and for other purposes." This bill was referred to the House Committee on Interstate and Foreign Commerce, where it still is. And H. J. Res. 468, a joint resolution to dedicate the month of April in each year to a voluntary national program for the control of cancer, was introduced by Representative Rogers of Massachusetts. This joint resolution proposes that the President shall issue annually a proclamation setting aside the month of April of each year as Cancer Control Month and shall invite annually the governors of the several states and territories and possessions of the United States to issue proclamations for like purposes. It was referred to the House Committee on the Judiciary and was reported, March 10, 1938, with a recommendation that it pass. It has passed the House and Senate.

H. R. 8655, introduced by Representative Dunn of Pennsylvania, proposes to provide $200,000,000 for the prevention and cure of cancer, infantile paralysis, tuberculosis, blindness, deafness and other social diseases. It was referred to the House Committee on Interstate and Foreign Commerce, where it still is.

Venereal Diseases: H. R. 3680 was introduced by Representative Pfeifer of New York, to amend the Social Security Act by authorizing an appropriation of $25,000,000 for the control of venereal diseases. This bill proposes an appropriation of $25,000,000 annually to assist states, counties, health districts and other political subdivisions of the states in establishing and maintaining adequate services for the prevention, control and treatment of venereal diseases, the money to be distributed under the federal subsidy system and the work done to be under the supervision and control of the Surgeon General of the Public Health Service. This bill was referred to the House Committee on Ways and Means and it is still there.

H. R. 7850 was introduced by Representative Boren of Oklahoma, to authorize an appropriation of $4,000,000 for the control of venereal diseases, and for other purposes. This bill proposes to authorize an appropriation of $4,000,000, to remain available until expended, to be allotted to the several states by the Surgeon General of the Public Health Service for expenditure by such states for the control of venereal diseases. This bill was referred to the House Committee on Interstate and Foreign Commerce, where it still is.

H. R. 9047, introduced by Representative Bulwinkle of North Carolina, proposes "to impose additional duties upon the United States Public Health Service in connection with the investigation and control of the venereal diseases." This bill is similar to S. 3290, discussed later, introduced by Senator La Follette of Wisconsin. H. R. 9047 proposes to authorize appropriations for federal subsidies, to be distributed by the Surgeon General of the Public Health Service, among the several states, apparently at his discretion, beginning at $3,000,000 a year and reaching in the fiscal year ending June 30, 1942, the sum of $25,000,000, which amount, it is proposed, shall be appropriated annually. The only additional duty it proposes to impose on the Surgeon General seems to be the supervision and control of the work done by the several states on the basis of the grants of public moneys that he makes. This bill was referred to the House Committee on Interstate and Foreign Commerce, where it now is.

S. 3290, Senator La Follette's bill, was referred to the Senate Committee on Commerce, which recommended its enactment after reducing the appropriations to the following amounts: for the fiscal year ending June 30, 1939, $3,000,000; for the fiscal year ending June 30, 1940, $5,000,000; for the fiscal year ending June 30, 1941, $7,000,000, and for each of the ten fiscal years thereafter such sum as may be needed to carry out the purposes of the act. This bill is now on the Senate Calendar.

H. J. Res. 572, introduced by Representative Boren of Oklahoma, proposes to require a report from the Public Health Service, during the current session, which began Jan. 3, 1938, of "(1) all facts pertaining to the prevention of syphilis, with particular reference to the steps which have or may be taken by such Service to assist in the prevention of such disease, and (2) any recommendations for legislation or other action by the United States which such Service may deem necessary in the prevention of such disease." This resolution was referred to the House Committee on Interstate and Foreign Commerce, where it now is.

Tuberculosis: H. R. 8131, introduced by Representative Terry of Arkansas, proposes "to provide for tuberculosis hospitals and their operation." It proposes to authorize an appropriation of $5,000,000 annually for five years, to enable each state to make adequate provision of hospital beds for tuberculous patients. The money is to be spent under the direction of the Surgeon General of the Public Health Service. Payments are to be made to the several states from time to time on the certificates of the Surgeon General, showing that the state to be paid "has submitted a satisfactory plan for provision of hospital care for tuberculous patients and which has appropriated from its own funds 25 per centum of the total sum required to carry out the plan." This bill was referred to the House Committee on Interstate and Foreign Commerce, where it still is. An identical bill, S. 2746, was introduced in the Senate by the late Senator Robinson, July 6, 1937, and referred to the Senate Committee on Education and Labor. It is still in that Committee.

S. 123, introduced by the late Senator Robinson, by request, proposes "to provide for tuberculosis hospitals and for their operation." This bill proposed to authorize an annual appropriation of $5,000,000 for an indefinite period, "for the purpose of enabling each State to provide and operate at least one hospital bed for tubercular patients to each annual death from tuberculosis." Payments will be made, the bill proposes, to states which have submitted, and had approved by the Surgeon General of the Public Health Service, state plans for such hospitalization. This bill was referred to the Senate Committee on Education and Labor, where it still is.

H. R. 8655, introduced by Representative Dunn of Pennsylvania, proposes to authorize the appropriation of $200,000,000 for the prevention of certain diseases, among them tuberculosis. The other diseases covered by the appropriation are cancer, infantile paralysis, blindness, deafness and other social diseases. This bill was referred to the House Committee on Interstate and Foreign Commerce, where it now is.

Infantile Paralysis, Blindness, Deafness and Other Social Diseases: H. R. 8655, introduced by Representative Dunn of Pennsylvania, proposes to provide $200,000,000 for the prevention and cure of cancer, infantile paralysis, tuberculosis, blindness, deafness and other social diseases. The President is to be empowered to draw from the federal treasury the amount of money specified to carry out the provisions of the act, but no restrictions whatever are imposed on the methods to be used to accomplish the ends aimed at.

Silicosis and Related Dust Diseases: H. R. 7971 and H. R. 9689, both introduced by Representative O'Connell of Montana, propose "to regulate interstate commerce in goods produced under conditions exposing employees to the hazards of

silicosis and related dust diseases." To accomplish that end, the bills would make it unlawful for any person to ship or deliver for shipment goods in interstate or foreign commerce if they were produced in any mine, quarry, mill, workshop, factory or other place of employment situated in the United States in which silica dust or other harmful dust hazard is present, in violation of any orders prescribed by the Secretary of Labor, which orders the secretary is to be authorized by the act to issue. The bills were referred to the House Committee on Labor, where they still are.

Hospitals for the "Medically Needy": S. 3631, introduced by Senator Pepper of Florida, is a bill to provide for assistance to states, counties, health districts and other political subdivisions of the states in the construction of additional hospital facilities for the medically needy. For the construction of such hospitals, including health centers, the bill proposes annual appropriations of $200,000,000 for five years; for the maintenance of such hospitals, annual appropriations of $73,000,000 for five years, and to assist states, counties, health districts and other political subdivisions to provide hospital care for the "medically needy" annual appropriations of $1,000,000 for five years. The federal appropriations proposed by this bill are to be allotted by the Public Health Service to the several states on the basis of (1) the extent of need for additional hospital facilities and hospital care for the "medically needy" and (2) the financial needs of the respective states. The money allotted must be spent in accordance with plans approved by the Surgeon General of the Public Health Service.

Medical Care for Transients: H. R. 9256, introduced by Representative Voorhis of California, proposes to amend the Social Security Act to provide for aid to states for the care of transients. The bill proposes to authorize an appropriation of $10,000,000 for the fiscal year ending June 30, 1938, and for each fiscal year thereafter a sufficient sum to carry out the purpose of the bill, such sums to be allotted to the several states for the purpose of enabling them to furnish financial assistance or other assistance, including medical, dental and mental aid to needy transients. To qualify for the receipt of any allotment, each state must submit plans for aid to transients to the Social Security Board and have them approved by that board.

Foods, Drugs, Diagnostic and Therapeutic Devices and Cosmetics.—Helium Gas: H. R. 7494, introduced by Representative (now Senator) Hill of Alabama, and S. 1567, introduced by Senator Sheppard of Texas, proposed to amend the act entitled "An Act authorizing the conservation, production, and exploitation of helium gas, a mineral resource pertaining to the national defense, and to the development of commercial aeronautics, and for other purposes." The purposes of both bills included the establishment of means by which helium gas not needed for military purposes might be sold for various civilian purposes, among them use for investigation and treatment of diseases. The Senate bill was passed by Congress and approved by the President Sept. 1, 1937. Regulations governing sales for medical and other nongovernmental uses have been approved by the President and were published in the Federal Register, Feb. 26, 1938, pages 535-541. A summary appeared in THE JOURNAL, March 19, 1938, page 907.

Cannabis: H. R. 6906 was introduced by Representative Doughton of North Carolina "to impose an occupational excise tax upon certain dealers in marihuana, to impose a transfer tax upon certain dealings in marihuana, and to safeguard the revenue therefrom by registry and recording." This bill, which originated in the Treasury Department, proposed to regulate the possession, dispensing, administering and prescribing of cannabis and its preparations and derivatives along lines similar to those imposed on the possession, dispensing, administering and prescribing of opium and coca leaves, their derivatives and compounds, by the Harrison Narcotic Act. The act was passed by Congress and was approved by the President Aug. 2, 1937. Regulations promulgated under the act were published in the Federal Register, Oct. 1, 1937, pages 2395-2407. A synopsis was published in THE JOURNAL, Oct. 16, 1937, pages 63B-64B.

False Advertising of Foods, Drugs, Diagnostic and Therapeutic Device and Cosmetics: S. 1077 was introduced by Senator Wheeler of Montana "to amend the act creating the Federal Trade Commission, to define its powers and duties, and for other purposes." As introduced, it had no special reference to foods, drugs, diagnostic and therapeutic devices and cosmetics; it related to them exactly as it did to all other merchandise. It proposed to extend the jurisdiction of the Federal Trade Commission, which prior to the enactment of this bill covered only "unfair methods of competition in commerce," so as to make it extend to all "unfair or deceptive acts and practices in commerce." The bill passed the Senate, and in the House of Representatives it was referred to the Committee on Interstate and Foreign Commerce, of which Representative Lea of California is chairman. Representative Lea referred the bill to a subcommittee of which he is chairman also, which already had before it a mass of legislation relating particularly to foods, drugs, diagnostic and therapeutic devices and cosmetics, including in it S. 5, the Copeland Food and Drugs Bill, which had passed the Senate. In the end, the provisions for the regulation of the advertising of foods, drugs, diagnostic and therapeutic devices and cosmetics, which appeared in S. 5, the Copeland bill, were taken from it, more or less attenuated, and then incorporated in the bill now under consideration. The bill, known as the Wheeler-Lea bill, was then enacted with other modifications and was approved by the President, March 21, 1938. Its enactment means, it is believed, the exclusion of adequate advertising provisions to control the advertising of foods, drugs, diagnostic and therapeutic devices and cosmetics from any of the bills relating to merchandise of any of those kinds.

Elixir of Sulfanilamide-Massengill: S. Res. 194 was introduced by Senator Copeland of New York, requesting the United States Department of Agriculture to transmit to the Senate a full report of the facts concerning the deaths that then had recently occurred from the use of "a drug known as Elixir of Sulfanilamide" shipped in interstate commerce and to submit "recommendations for any needed legislation on the subject." This resolution was agreed to. A similar resolution, H. Res. 352, introduced by Representative Chapman of Kentucky, was agreed to by the House.

In response to the foregoing two resolutions, the Secretary of Agriculture submitted a report to the Congress with suggestions for legislation. Those suggestions were embodied in S. 3073, introduced in the Senate by Senator Copeland, A bill to safeguard the public health, and in a bill, H. R. 9341, introduced in the House of Representatives by Representative Chapman of Kentucky, A Bill to safeguard the public health against the distribution of drugs not generally recognized as safe for use. Both bills propose to prohibit any person from introducing or delivering for introduction into interstate commerce any drug the composition of which is such that the drug is not generally recognized, among experts qualified by scientific training and experience to evaluate the safety of drugs, as safe for use under the conditions prescribed, recommended or suggested in the labeling thereof, unless such person holds a certificate issued by the Secretary of Agriculture showing that the drug has been tested and has not been found to be unsafe for use under such conditions. They propose to set up the machinery whereby the Secretary of Agriculture can discharge the duties imposed on him. The Senate bill has been favorably reported by the Committee on Commerce, to which it was referred, and is now on the Senate calendar. The House bill was referred to the House of Representatives Committee on Interstate and Foreign Commerce and is still before that committee. The subcommittee of the Committee on Interstate and Foreign Commerce that has the matter in charge is endeavoring to incorporate this bill in the remnants of the Copeland Food and Drugs bill, S. 5.

Surgical Ligatures and Sutures: H. R. 6359, introduced by Representative Bernard of Minnesota, and S. 1629, introduced by Senator Walsh of Massachusetts, propose to exclude from interstate and foreign commerce any surgical ligature or suture unless prepared at an establishment holding a license issued by the Secretary of the Treasury and contained in a package marked with the proper name of the article, the name, address and license number of the manufacturer, and the date beyond which the contents cannot be expected beyond reasonable doubt to yield their specific results. These bills propose an amendment

to "An Act to regulate the sale of viruses, serums, toxins, and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes," approved July 1, 1902, and therefore were referred, respectively, to the House and Senate Committees on the District of Columbia.

No action has been taken on the House bill. The Senate bill was favorably reported and subsequently enacted by the Senate. It is now in the House of Representatives before the House Committee on the District of Columbia. Its enactment seems to be retarded by a desire on the part of certain persons in the Department of Agriculture to have jurisdiction over the production of surgical ligatures and sutures. The enactment of any pending legislation that gives the Secretary of Agriculture control over diagnostic and therapeutic devices will give him control over surgical ligatures and sutures, absorbent cotton, bandages, prosthetic apparatus of all kinds, surgical instruments and appliances, optical instruments and appliances, dental instruments and appliances, for they all come within the description of "devices" as that term is defined in pending bills. Strangely enough, too, one court has decided that a catgut ligature or suture is a "drug" and another has decided that a bandage is a "drug" within the meaning of the Federal Food and Drugs Act of 1906, as amended, decisions that are difficult for reasonable persons to follow.

Substitutes for Food and Drugs Act of 1906, as Amended: Six bills are now pending in the Congress, in addition to those referred to, to regulate the importation, production, manufacture, distribution and sale of foods, drugs, diagnostic and therapeutic devices and cosmetics. Only one seems to call for consideration here, S. 5, introduced by Senator Copeland of New York, passed by the Senate, and now pending in the House of Representatives, before the Committee on Interstate and Foreign Commerce. The advertising provisions of this bill, as has been pointed out, were transferred in an attenuated form to the Wheeler-Lea Federal Trade Commission bill, S. 1077, which has been enacted. All pending bills relating to foods, drugs, diagnostic and therapeutic devices and cosmetics, except as has been described, are now before that committee and an effort is being made to evolve from them, chiefly from the remnants of the Copeland bill, S. 5, and the Chapman bill, H. R. 9341, proposing to restrict the exploitation of untried drugs, a general foods, drugs, diagnostic and therapeutic devices and cosmetics bill. The results of the activities of the subcommittee having the matter in charge have been embodied in a "committee print," Committee Print No. 4, but up to present writing the matter is still pending in the committee. The proposed legislation, as embodied in Committee Print No. 4, seems to give priority to the claims of importers, producers, manufacturers, distributors and dealers in drugs and diagnostic and therapeutic devices over the claims and interests of consumers, and it may be seriously questioned whether the enactment of legislation, such as is formulated in Committee Print No. 4 of S. 5, would accomplish any good purpose. This legislation has been discussed at length during the year in pamphlets that have been widely distributed throughout the country and to all federal senators and representatives, but apparently without effect.

Legislation Relating to Veterans.—H. Res. 325, introduced by Representative Rankin of Mississippi, and agreed to by the House, Aug. 20, 1937, authorized the Committee on World War Veterans' Legislation or any subcommittee thereof to make a comprehensive survey and inspection of soldiers' hospitals and other veterans' administration facilities, including any hospital with which the government has a contract for ex-service men of any war in which the United States was engaged. The resolution required the committee to report its findings not later than Jan. 3, 1938. By H. Res. 408, however, introduced by Representative Rankin, and agreed to Jan. 28, 1938, the committee was given until Jan. 3, 1939, to complete its labors.

According to the Annual Report of the Administrator of Veterans' Affairs for the year ended June 30, 1937, there were on that date under the control of the Veterans' Administration 47,421 hospital beds and 16,225 domiciliary beds. Additions during the fiscal year 1938 will bring that number of hospital beds on June 30, 1938, up to 53,264 and the number of domiciliary beds up to 16,998. Present plans contemplate the addition in the fiscal year 1939 of 2,352 hospital beds, but 238 beds are to be abandoned, so that on June 30, 1939, if present plans are carried into effect, the number of hospital beds at the command of the Veterans' Administration will be 55,378 and the number of domiciliary beds will be 19,397. No funds were appropriated for hospital and domiciliary construction during the fiscal year ended June 30, 1937, but the administration prepared and placed under contract certain projects approved for accomplishment from the $21,250,000 appropriation made Aug. 12, 1935. On July 29, 1937, the Veterans' Administration Federal Board of Hospitalization approved the views and recommendations of the Administrator of Veterans' Affairs with respect to the matter of future policy concerning the construction of hospital facilities for veterans. Those views, as thus approved, were approved by the President, Sept. 20, 1937. The administrator states his views and recommendations as follows:

"Essentially, the new policy provides (*a*) for the acquisition of as many additional beds as may be required to meet the peak load of the N. P. group, by including each year under a separate appropriation heading sufficient funds to provide the anticipated number of beds at the time such estimates are submitted; (*b*) that no additional beds be provided specifically for tuberculous cases, except as may be necessary to correct unsatisfactory local conditions or deficiencies; and (*c*) that no general construction program be undertaken for the general medical and surgical group, but that additional beds for this type be provided in those areas where the available beds are disproportionate to the military population, such deficiencies to be met if possible through the use of other Government hospitals." *Annual Report of the Administrator of Veterans' Affairs for the Year 1937, pages 3-4.*

The Independent Offices Appropriation Act for the fiscal year ending June 30, 1939, carrying the appropriation for the Veterans' Administration, which is still in conference, proposes an appropriation of $4,500,000 for additional hospital and domiciliary facilities for veterans. The act itself places no restriction on the character of the contemplated hospital construction, whether for general medical and surgical treatment or for tuberculous patients or neuropsychiatric cases. Its distribution will be determined, it is understood, by the policy of the administration outlined.

It is impossible to discuss in detail the various bills proposing appropriations for the construction of new hospitals for veterans. For general medical and surgical cases, 10,399 additional beds are proposed by thirty-nine bills, at a cost of $43,385,000. For neuropsychiatric veterans, six bills propose to provide 1,894 additional beds, at a cost of $6,950,000. For tuberculous veterans, two bills propose the construction of 400 additional beds, at a cost of $860,000.

Contract and Acting Assistant Surgeons, Spanish-American War: H. R. 6498 was introduced by Representative Tinkham of Massachusetts, to provide pensions for persons who served under contract with the War Department as acting assistant or contract surgeons between April 21, 1898, and Feb. 2, 1901. Women nurses who served under contract as army nurses in the active military service of the United States between the dates named are already entitled to service pensions, that is, pensions incident not to disability incurred in line of duty but disability arising out of age. Contract surgeons and acting assistant surgeons who served under similar circumstances are entitled to pensions only for disability traceable to duty. This bill proposes only to make the pensionable status of contract surgeons and acting assistant surgeons the same as that of female nurses. The House Committee on Pensions gave a hearing on this bill, at which the Director of the Bureau of Legal Medicine and Legislation spoke in support of it. Up to the present writing, however, the committee has made no report.

Reorganization of the Executive Branch of the Federal Government: United States Department of Health.—Six bills were introduced in Congress proposing the reorganization of the executive branch of the federal government. The general purport of these bills was the vesting in the President of authority to allocate and reorganize the several existing bureaus, divisions and offices of the executive departments. The bills propose the creation of a Department of Welfare but none suggest the creation of a Department of Health, nor was it possible to arouse in the Senate or the House the slightest interest in such a project.

H. R. 8202, A Bill "to provide for the reorganization of agencies of the Government, to establish the Department of

Welfare, and for other purposes," well illustrates legislative procedure with respect to bills proposing reorganization. The House of Representatives Select Committee on Government Organization has for some time past been studying the entire matter. On Aug. 10, 1937, without previously having held public hearings, Representative Warren of North Carolina introduced this bill. It was forthwith referred back to the Select Committee on Government Organization, by which it had been proposed. On the same day that it was introduced, August 10, it was reported back without amendment, with a recommendation that it pass. On August 13 it was passed and went to the Senate. In the meanwhile, in the Senate two committees had been engaged in a study of reorganization, a Select Committee to Investigate the Executive Agencies of the Government, the primary interest of which seems to be to incorporate economy and efficiency in anything that might be proposed, and a Select Committee on Government Organization, operating apparently for the purpose of bringing about a reorganization by the President. H. R. 8202, which had passed the House of Representatives, was referred to the latter committee, of which Senator Byrnes of South Carolina is chairman. Through his courtesy the chairman of the Association's Committee on Legislative Activities and the Director of the Bureau of Legal Medicine and Legislation were given fifteen minutes each wherein to present the views of the American Medical Association in support of the creation of a Department of Health, but the time allotted was materially abbreviated by questioning by members of the committee. That committee, August 17, reported to the Senate a bill, S. 2970, with the recommendation that it pass. Subsequently a redraft of this bill, S. 3331, was introduced by Senator Byrnes of South Carolina, referred to the Senate Select Committee on Government Organization and by that committee reported to the Senate, February 15, with amendments. The bill passed the Senate March 28 but further consideration by the House of Representatives is necessary before final enactment. So far as medical interests are concerned, and so far as relates to the establishment of a United States Department of Health, this bill does not differ materially from the bill passed by the House of Representatives.

H. R. 8202, one of the reorganization bills, which has passed the House of Representatives, and S. 3331, now being considered by the Senate, both provide for the establishment of a Department of Welfare, with a Secretary of Welfare at its head. An Under Secretary of Welfare and two Assistant Secretaries of Welfare are to be provided. The duty of the Secretary of Welfare is defined as follows in S. 3331:

> Sec. 401 (*c*). The Secretary of Welfare shall administer the laws relating to any agency or function transferred to, or brought within the jurisdiction and control of, the Department of Welfare pursuant to law, which relate to public health and sanitation; the protection of the consumer; education; the relief of unemployment and of the hardship and suffering caused thereby; the relief of the needy and distressed; the assistance of the aged; and the relief and vocational rehabilitation of the physically disabled. . . .

United States Postgraduate Medical and Surgical College.—H. R. 9687, introduced by Representative May of Kentucky, March 1, 1938, is a bill "to establish a United States Postgraduate Medical and Surgical College and Research Institute, to provide properly trained medical, surgical, and health personnel for the Military, Naval, and Public Health Services, to coordinate and improve health research activities of the Federal Government, and for other purposes." The college, to be designated as an institute, is to be under the control and administration of a board of regents, consisting of the Surgeon General of the Army, the Surgeon General of the Navy, and the Surgeon General of the Public Health Service and four members appointed by the President. The college is to provide medical, surgical and clinical facilities for the diagnosis and treatment of all types of illness, physical and mental disabilities, for any person whose annual income is not in excess of $1,000, except in police cases and in cases of emergency arising from accident. It is to establish and maintain a course of training and research in medical and surgical science and public health, open to graduates of accredited medical and surgical colleges seeking training for army, navy and public health work, on designation of senators and representatives. The training is to extend over a period of three years, students receiving $1,200 a year while in training. Graduates are to have a preferred status for vacancies in the Army, Navy, and Public Health Service and must serve in one of the three services for four years, if and when vacancies occur. This bill was referred to the House Committee on Interstate and Foreign Commerce, where it now is.

SOCIAL SECURITY AND INCOME TAXES AND STATE AND COUNTY MEDICAL ASSOCIATIONS

The fact that state and county medical associations might be liable for taxes under the Social Security Act and were required to prove their right to exemption brought to light the fact that many such associations were unaware of the possibility of a similar tax liability and obligation under the Federal Income Tax Acts. Such acts for many years past have imposed certain income taxes on associations and corporations generally and have then exempted certain classes of such organizations. The exemption, so far as state and county medical associations are concerned, is as follows:

> "The following organizations shall be exempt from taxation under this title—
>
> . . . . . .
>
> (6) Corporations, and any community chest, fund, or foundation, organized and operated exclusively for religious, charitable, scientific, literary, or educational purposes, or for the prevention of cruelty to children or animals, no part of the net earnings of which inures to the benefit of any private shareholder or individual, and no substantial part of the activities of which is carrying on propaganda, or otherwise attempting to influence legislation;
>
> . . . . . ."
>
> *Income Tax Act of 1936, Section 101 (6).*

The Commissioner of Internal Revenue, who is charged with the duty of collecting the federal income tax, has by regulation required that an organization claiming exemption shall file its claim with the collector of internal revenue in the collection district in which such organization will be required to pay income taxes if it is not tax exempt.

The general plan of tax liability for state and county medical associations under the Social Security Act is similar to that under the Income Tax Act, as set forth, except that exemption from tax liability under the Social Security Act does not depend on the nature and extent of the association's attempts to influence legislation. The Commissioner of Internal Revenue, who is charged with the duty of collecting taxes under the Social Security Act, has held that an organization that has established its tax-exempt status under the section of the Income Tax Act quoted will be presumed to be exempt under the Social Security Act also, but obviously the contrary is not necessarily true. An organization whose activities are substantially in the field of propaganda to influence legislation might be barred from exemption under the Income Tax Act and yet not barred under the Social Security Act.

The Bureau of Legal Medicine and Legislation has brought this matter to the attention of the several state medical associations and has given them full instructions as to procedure for themselves and their respective county medical societies. Some of them have established their tax-exempt status, but how generally efforts have been made toward that end and how successful such efforts have been is not known. The situation should receive the serious consideration of state and county medical associations, in order that they may bring themselves within the tax-exempt class if they are not already there and thus prevent the accumulation of taxes and tax penalties that must ultimately be paid.

SOCIAL SECURITY TAXES AND THE PHYSICIAN

The year 1937 marked the beginning of the active duties of physicians, together with all other taxable employers, under the Federal Social Security Act. The act imposes on employers, with certain exceptions, two distinct payroll taxes. With respect to these taxes a physician stands in a position no different from that of any other employer. Even the fact that his employees are physicians is not material. One tax is imposed only on employers of eight or more and is designed to provide so-called unemployment compensation for workers eligible for such benefits. The other tax is imposed on an employer and employee alike, even though there is only one employee, and is designed

to provide old-age annuities for such workers as may ultimately be entitled to them. Not only must every physician employing one or more persons—as, for instance, another physician acting as his assistant on a part time or full time basis, or a nurse, or a reception clerk—pay this tax, but he must collect and remit to the collector of internal revenue the tax payable by his employees. The Bureau of Legal Medicine and Legislation, through editorials, comments and special articles published in THE JOURNAL, has endeavored to guide the medical profession through the mazes of their tax liability. Its efforts seem to have borne fruit, judging from the diminished number of requests recently received from physicians for advice and guidance with respect to these taxes.

STATE LEGISLATION

Through a legislative reporting service, the Bureau of Legal Medicine and Legislation receives daily when any state legislature is in session notices of bills of interest to the medical profession that have been introduced. Ordinarily such notices are received about the third day after the introduction of the bill and consist of only the number and title of the bill, the name of its sponsor, and the title of the committee to which it has been referred. Obviously, a state medical association that maintains its own legislative service at the state capital or has its headquarters there usually obtains such information more promptly than can the Bureau of Legal Medicine and Legislation in Chicago, but most of our state associations are not so fortunately situated. The Bureau, therefore, immediately on receipt of notice that a bill has been introduced reports its introduction to the president, the secretary and the chairman of the legislative committee of the state association immediately concerned. This reporting in triplicate enables the officers named to confer among themselves at once to determine the policy of their association with respect to the measure.

As soon as possible after the introduction of a bill, our legislative reporting service supplies a copy of it, and it is then analyzed by the Bureau in the light of the laws already in force in the state and of the policies of the American Medical Association. If the analysis shows anything of moment that may escape the attention of the officers of the state medical association, a letter stating the facts is immediately sent to the secretary of the association, copies of which are sent to the president and the chairman of the legislative committee, for their guidance. In any event, an abstract of each bill is submitted to THE JOURNAL for publication, so that every Fellow of the Association and every subscriber to THE JOURNAL may know what legislation is pending in his own state. In this way, interested Fellows and members of the Association in every State, and subscribers to THE JOURNAL, learn what is going on more promptly than would otherwise be possible, for the state journals, with possibly a very few exceptions, appear only monthly whereas the service rendered by the Bureau, through THE JOURNAL, is weekly. A similar service is rendered as the bill progresses toward defeat or enactment; the Bureau receives from its legislative reporting service reports of action by committees and by either branch of the legislature and of the enactment or defeat of the bill, if it reaches a final vote. As has been pointed out, although a few state medical associations are so highly organized and fortunately situated as not to be in need of such service as is described, to a large number of such associations the service seems to be of value.

After the close of each calendar year, the legislation that has been considered by state legislatures that met during the year is summarized and the result published in THE JOURNAL, to keep the medical profession of the country informed of the trends of legislation and legislative opinion in the various legislative fields of medical interest and of the successes and the failures of the several state associations in promoting or defeating legislation in which they severally have been interested. The summary of state legislation for 1937 was published in the Organization Section of THE JOURNAL, February 5, 12 and 19 of the current year. A brief discussion of some of the more important state legislation considered during 1937 follows.

Laws Relating to the Healing Art.—Basic science acts were passed in 1937 in Colorado, Michigan and Oklahoma. Unfortunately, the boards of examiners authorized by the Colorado and Oklahoma laws each include a physician, an osteopath and a chiropractor, and not such truly nonsectarian boards as a basic science law usually provides. A chiropractic practice act was passed in Delaware, and chiropractors there are now licensed by an unsupervised and uncontrolled board of chiropractic examiners, without even such restraint as a basic science law might impose, for Delaware has no such law. With respect to naturopaths a similar situation exists in South Carolina, where a naturopathic practice act was enacted and an independent naturopathic licensing board created. Medical practice acts were amended or supplemented in Arkansas, California, Connecticut, Delaware, Kansas, Minnesota, Nebraska, Nevada, New Hampshire, Oregon, Pennsylvania and Vermont. Osteopathic practice acts were amended in Kansas, Michigan, Missouri, North Carolina and Pennsylvania. Chiropractic practice acts were amended or supplemented in Connecticut, Florida, Idaho, New Hampshire, North Carolina and Oklahoma. Details concerning all such legislation can be found in the Organization Section of THE JOURNAL (Feb. 5, 1938, pp. 59B-67B).

Medical and Hospital Lien Law.—A lien law was enacted in the state of Washington which authorizes liens for physicians and hospitals treating and caring for persons injured through the negligence of others. The authorized liens may cover on all rights of action, claims, judgments or compromises accruing to the patient because of his injury.

Health Insurance.—Bills proposing the establishment of systems of compulsory state health insurance were considered in 1937 in Massachusetts, New York, Pennsylvania, Rhode Island and Wisconsin, but not one was enacted. All were patterned closely after the so-called Epstein social security bill for health insurance.

Narcotic and Hypnotic Drugs.—The uniform narcotic drug act, with but little modification, was enacted in 1937 in Arkansas, Michigan, Minnesota, Missouri, Montana, Nevada, Tennessee, Texas and Wyoming. Thirty-two states have now adopted legislation conforming substantially to the uniform act. Bills masquerading as the "uniform narcotic drug act," but differing from it in important particulars, were enacted in Idaho and Iowa. Neither of these laws limits to any stated amount the quantity of opium and coca leaves and their derivatives and compounds that a person can buy without a prescription, provided he purchases the drug in so-called exempt preparations. Similarly impotent laws have been enacted in five other states since 1934. So widespread has been this movement toward emasculation of narcotic legislation that a question arises as to whether it has not been directed from some central agency interested in removing restraint from the sale of the narcotic drugs named. The distribution of narcotic drugs through so-called exempt preparations has assumed such proportions as to call for drastic measures to curb it, rather than to justify or excuse any breaking down of the law in order to facilitate the widespread sale of such preparations.

The uniform narcotic drug acts in force in Nebraska, New Mexico and South Carolina were amended in 1937 so as to classify cannabis among the narcotic drugs covered by them. In Arkansas and Tennessee laws were enacted prohibiting the possession, sale or distribution of cannabis, so-called marihuana, except sale and distribution on the written prescription of a physician, dentist or veterinary surgeon.

The sale and dispensing of certain hypnotic and somnifacient drugs were limited by law in two states, in 1937, to sales and dispensing on the prescription of licensed physicians, dentists and veterinarians. In Rhode Island the restrictive law covers barbital, trional, sulfonal, tetronal carbromal, paraldehyde, chloral or chloral hydrate and chlorobutanol. In the South Carolina law "barbiturates or barbiturate compounds" are named. A Texas law imposing limitations on similar sales was repealed.

Hospital Service Corporations.—Corporations to provide "hospital care" for their members and subscribers, on a so-called nonprofit basis, were enacted during the year in California, Georgia, Maryland and Pennsylvania.

Workmen's Compensation.—Legislation relative to occupational diseases was enacted in Delaware, Indiana, Michigan, Ohio, Nebraska, Pennsylvania and Washington. The Indiana act provides compensation for disability resulting from any occupational disease arising out of and in the course of employment. The laws of the other states named include lists of the diseases for which benefits may be paid. Laws increasing the medical, surgical and hospital service to be rendered at the employer's expense were enacted in Indiana, Iowa, Kentucky, Pennsylvania and Rhode Island. Pennsylvania and Vermont, by laws enacted in 1937, permit an injured workman to select his own physician under certain stated conditions.

Eugenic Marriage Laws.—Laws requiring as a condition precedent to the issue of a marriage license that both parties to the proposed marriage present certificates of freedom from venereal disease, signed by physicians, were enacted in 1937 in Illinois, Michigan and New Hampshire. Prior laws in Oregon and Wisconsin, requiring such certificates from prospective bridegrooms only, were amended to require similar certificates from the prospective brides also.

Vaccination.—Successful immunization against smallpox and diphtheria was made a condition precedent to the admission of children to school by a West Virginia statute enacted during the year.

Contraception and Venereal Disease Prophylactics.—California, Idaho, Nebraska and Utah during the year prohibited by law the sale or other distribution, except by a licensed physician or by a licensed pharmacist, of appliances, drugs and medicinal preparations intended or having special utility for the prevention of conception and of venereal diseases. These laws limit generally the sale of such appliances, drugs and preparations to such as have been approved and listed by some designated state agency as conforming to the standards of quality and labeling stated in the law.

STATE LEGISLATION BY INITIATIVE

The constitutions of some states, chiefly states in the West and the Southwest, provide for the enactment of legislation by the people directly, through their own votes at the polls, by what is sometimes referred to as the initiative system, so as to enable them to evade the considered judgement of their elected representatives in their respective legislatures. In those states too that authorize legislation through the initiative, provision is made also by means of the referendum for overriding the action of the legislatures by referring to the electorate at the polls measures that may have been enacted by the legislature, thus giving the electorate a chance to reverse the action of its elected legislators. Procedures under the intiative and referendum have been resorted to on several occasions heretofore, generally to accomplish some purpose that did not and would not appeal to the best judgment of the legislature. The chiropractic practice act and the osteopathic practice act of California were enacted in this way in 1922, and under the constitution of the state can be changed only by another initiative procedure; in that state the legislature is powerless to afford relief against a law enacted through the initiative, but if relief is to be obtained it must be obtained through another initiative. In 1922 also an initiative in California, to prevent animal research, was defeated through the energetic action of the California Medical Association. More recently the chiropractors of Oregon endeavored through the initiative to organize a radical and an entirely new system of control of the practice of the healing art that would have broken down all safeguards, but the electorate of that state promptly defeated the measure. At the present time initiative measures are pending or have recently been disposed of in three states: California, Colorado and Oklahoma.

In Colorado an initiative measure was proposed by the chiropractors of the state to remake the laws of the state relating to the practice of the healing art. Through the vigorous action of the Colorado State Medical Society, it was demonstrated, after the petition had been presented to the secretary of state for incorporation in the ballot that is to be presented in November next, that many of the signatures on the initiative petition were forged and that there were other substantial irregularities. Proof of such irregularities in the initiative petition barred the proposed initiative measure from the ballot, and by the time the proof was offered it was too late for the proponents of the proposed initiative measure to go over the field and to correct their mistakes, even if they had been otherwise able to do so. The Colorado initiative has therefore been definitely defeated for the present.

In California the pending initiative measure is designed to hinder the use of living dogs for purposes of research. It proposes to forbid the delivery of any living dog from any pound in the state to any institution of learning or research for purposes of study or instruction. The people of the state have formed an organization to combat the arguments of the proponents of this measure, and the issue will be fought out at the polls in November next.

In Oklahoma the initiative proposes, principally, so to amend the medical practice act as to permit hospitals and clinics organized on a mutual or cooperative basis to enter into contracts for hospital or medical services and to prevent the board of medical examiners from disciplining licensed physicians who cooperate in such schemes.

MALPRACTICE

The American Medical Association is without exact information concerning the frequency of demands on physicians and of suits against them, for damages alleged to have been suffered by reason of malpractice, or of the causes and results of such demands. In the absence of such information, advice as to measures of prevention must be based on speculation rather than fact, and there is no available method for determining the results of such advice.

Some medical associations have interpreted the ruling of the joint committee made up of members of the Committee on Ethics and Grievances and the Committee on Unauthorized Practice of the American Bar Association, in the Ohio State Medical Association case, as barring a medical association from cooperating at all with members in defense against malpractice suits. That is not the case. So long as the medical association limits its activities to the medical aspects of the case, it is certainly within its rights. The medical association itself is entitled to legal aid in determining its own course. The line of demarcation comes if and when it undertakes to determine for the member who has been made the victim of a demand or a suit the attorney whom he shall employ or to aid that attorney by furnishing legal assistance. It is believed that a properly organized committee on grievances, by whatever name it may be known, can properly hear the evidence of a member who has been threatened with a suit or is being sued and of such witnesses as he may desire to produce. It may hear also, if the patient is willing, the patient and such witnesses as he may offer. The committee for the medical association can then, with the assistance of its own counsel, determine for its own guidance whether the physician involved in the case exercised due diligence, ordinary knowledge and skill, and his best judgement, and whether he respected his patient's confidence, within the limits required by good professional practice. In the light of the information thus gained the medical association can determine whether it will or will not cooperate with the physician through the furnishing of expert medical witnesses and, it may be, an expert medical assistant for counsel. Such a committee can also keep a record of such claims and suits as are brought to its notice and of the ultimate results, can attend trials, and can generally study and investigate the malpractice situation within its own jurisdiction, including insurance rates and methods of insurance companies, and it then can determine what action can be best taken to limit the number of malpractice suits and the amounts of damages awarded.

ANIMAL EXPERIMENTATION

The District of Columbia has no legislature. Its board of commissioners has limited authority in the way of making regulations, but laws for the District are enacted by Congress. In its capacity as legislature for the District of Columbia, the Congress has the following two bills before it, H. R. 3890, introduced by Representative Quinn of Pennsylvania, and S. 1818, introduced by Senator Frazier of North Dakota, that

propose "to prohibit experiments upon living dogs in the District of Columbia." The Senate bill was referred to the Senate Committee on the District of Columbia, where it now is. The House bill was referred to the House Committee on the District of Columbia and a hearing has been held on it, but the committee has made no report. The purpose of these bills is, it is understood, to provide an entering wedge whereby, after experimentation on living dogs has been prohibited, experimentation on all other animals will in like manner be prohibited, and whereby, after any legislation of this class has been enacted by Congress for the District of Columbia, efforts will be made to procure similar legislation in the several states, the legislatures of which will supposedly be greatly impressed with the fact that Congress has enacted a law of this type.

As noted, an initiative measure is pending in California that if enacted will hinder the use of dogs for experimental purposes.

COOPERATION APPRECIATED

On behalf of the Bureau of Legal Medicine and Legislation, the Board of Trustees expresses appreciation of the cooperation that the Bureau has received from the several state and county medical associations of the country and from individual physicians.

Summary

1. *Federal Legislation.*—(*a*) Since the last report of the Board to the House of Delegates, the Congress has enacted the National Cancer Institute Act, the Marihuana Tax Act of 1937, An Act authorizing the Bureau of Mines to manufacture and sell helium gas for medical and other nongovernmental uses, and an act devolving on the Federal Trade Commission jurisdiction over the advertising of foods, drugs, diagnostic and therapeutic devices and cosmetics.

(*b*) Five proposals are pending contemplating either a federal investigation concerning health insurance or the enactment of definite schemes for the establishment of health insurance. No action has been taken on any of these proposals. Another similar measure proposes the establishment of a United States Postgraduate Medical and Surgical College to provide not only postgraduate courses in medicine but also medical and surgical services for persons whose annual incomes are not in excess of $1,000. An investigation of the activities of the American Medical Association and of state and county associations in connection with Group Health Association, Inc., is proposed by a pending resolution.

(*c*) Bills are pending, some of which are receiving consideration, contemplating federal subsidies to aid the states in general health activities, in the medical care of transients, and in the control of venereal diseases and tuberculosis. Other federal proposals contemplate the establishment of hospitals for the "medically needy," the use of federal moneys for the prevention and cure of infantile paralysis, blindness, deafness and other social diseases, and the regulation of interstate commerce in goods produced under conditions exposing employees to the hazards of silicosis and related dust diseases.

(*d*) After the Copeland food and drugs bill, S. 5, was stripped of all provisions relating to advertising and they were transferred to the Federal Trade Commission bill that was enacted, efforts were begun to evolve a new measure from the remnants of the Copeland bill and from other proposals relating principally to drugs not generally recognized as safe for use. Indications are that the new measure may possibly give priority to the interests of importers, producers, manufacturers, distributors and dealers over the interests of consumers.

(*e*) The House Committee on World War Veterans' Legislation is continuing its investigation of veterans' hospitals. At the same time proposals for the construction of additional hospital facilities for veterans of the World War continue to increase. The discrimination that has long existed against contract surgeons of the Spanish-American War remains uncorrected.

(*f*) Efforts to arouse interest in the establishment of a Federal Department of Health have been unproductive. Pending reorganization proposals contemplate the creation of a Department of Welfare in which will be grouped the health activities of the government.

(*g*) Legislation proposing to prohibit experiments on living dogs in the District of Columbia is pending. If this legislation is enacted it will serve as an entering wedge and will facilitate the enactment of similar legislation by the several states.

2. *Social Security Act.*—State and county medical associations are subject to the taxes imposed by the Social Security Act and by the Federal Income Tax Act unless they establish their exempt status to the satisfaction of the Commissioner of Internal Revenue. Individual physicians, if employees or employers, are subject to the social security taxes.

3. *State Legislation.*—(*a*) Through a legislative reporting service the Bureau keeps constantly in touch with state legislation of medical interest and promptly advises state associations of legislative proposals of particular medical interest. New basic science laws were enacted in Colorado, Michigan and Oklahoma. Compulsory state health insurance proposals were made, but not enacted, in Massachusetts, New York, Pennsylvania, Rhode Island and Wisconsin. Other legislation of medical interest enacted in one or more states relates to narcotics, medical liens, hospital service corporations, eugenic marriage, vaccination, contraceptive devices, chiropractic, naturopathy, osteopathy and medical practice acts generally.

4. *Initiative Measures.*—In states where the enactment of legislation by the people directly through the medium of the initiative measure is possible, opponents of scientific medicine are seeking to give effect to this opposition through the approval of initiative measures by the people. Colorado defeated a chiropractic initiative proposal that would have utterly disrupted the medical licensure scheme in the state. Other initiative measures are pending in California, to prohibit the use of living dogs for experimental purposes, and in Oklahoma, to permit, among other things, hospitals and clinics to enter into contracts for the supplying of medical care.

5. *Malpractice.*—State medical associations can and should assist members against whom unjust claims based on alleged malpractice are made. Such assistance, however, should be so confined as to avoid any encroachment on the field of the practice of law.

Bureau of Health and Public Instruction

RADIO PROGRAM

An important activity of this Bureau is that concerned with a weekly broadcasting program carried out with the fine cooperation of the National Broadcasting Company. The dramatized radio program initiated in 1935 finished its second successful season in June 1937, with a series of broadcasts based on the annual scientific assembly at Atlantic City. The weekly broadcasts dealt with various subjects under the head of "Medical Emergencies and How They Are Met." In October 1937 a new type of program was undertaken—a special program keyed to the needs of health classes in senior and junior high schools. Education by radio has progressed from the technic of merely broadcasting material at the listener and hoping that it may do some good to recognition of the fact that the best programs are what are known as "participating" programs, whereby the listener's interest is enhanced and his chances of learning are increased through doing something instead of merely listening.

It was apparent, from a general knowledge of the health education situation in schools, that at the high school and junior high school age level existed the greatest need and therefore the greatest opportunity for supplementing health

teaching in the schools, by means of a dramatized radio program with appropriate supplementary material through which participation could be stimulated. HYGEIA seemed the logical channel for the publication of such supplementary matter. The Board of Trustees authorized such a program. A radio supplement department was inaugurated in HYGEIA in October 1937 timed and coordinated with the radio dramatizations for that month. This has been continued each month. The HYGEIA material consists of briefs of the four programs constituting the group to be broadcast during the month corresponding with each issue of HYGEIA.

Shortly after the program was publicly announced the New York office of the National Broadcasting Company sent a representative of the Johnson Publishing Company, Richmond, Va., to the American Medical Association to inquire about publishing and distributing to the schools a workbook for the use of pupils listening to the program. Such a workbook was prepared by Drs. Bauer and Teschner and published by the Johnson Publishing Company, the publisher to undertake its distribution in the schools.

At the end of 1937, twelve programs in the series had been broadcast and a great deal of interest had been shown by educators. Public schools in a number of communities, including New York City, were using the program. Deputations from the State Department of Health of Illinois, from the Chicago city schools and other groups representing educators had visited the studios and witnessed the broadcasts. The evidence at hand is to the effect that the program as conceived fills a real need in the health curriculum of junior and senior high schools and that it has not lost its appeal to adult listeners outside the schools. The broadcasts for the fall and winter season of 1938-1939 will begin earlier than heretofore.

The radio library of the American Medical Association, which is maintained for the use of state and local medical societies, and organizations whose use of the material such societies are willing to sanction, has been used more heavily this year than in 1936, the number of scripts distributed being 4,589 for 1937 as compared with 3,388 in 1936. In 1937, seventy-two county medical societies used the scripts as compared with thirty-four in 1936, and thirteen state medical associations as compared with five in 1936.

The scripts have been kept up to date by dropping seventy-six older manuscripts and adding sixty new ones, leaving a total of 867 titles, of which 365 are for fifteen minutes, 188 for ten minutes and 300 for five minutes.

PROTECTION OF RESEARCH

The principal activity of those who oppose the use of animals for the purposes of research, aside from routine publications and propaganda, continues to be centered in Massachusetts and California, though effort has been made to secure the enactment by congress of legislation to apply to the District of Columbia.

For several years California antivivisectionists have been attempting to render impossible the use of dogs and cats from public pounds. Failing to get legislation through ordinary channels, they have resorted to the initiative provided for in California law. A petition for a so-called Humane Pound Law was circulated and received sufficient signatures to insure a place on the ballot for a vote in November 1938. The law as drawn would provide that medical schools or organizations participating in medical research could not receive dogs or cats from public pounds. Such a law would cripple medical research. Moreover, it is merely an entering wedge. Instead of covering only cats and dogs it would soon include, by amendment, all other animals. On the basis of success in California, the antivivisectionists would soon be seeking similar legislation in other states and, because of success in California, would be more liable to succeed elsewhere. The American Medical Association Committee for the Protection of Medical Research and this Bureau have attempted to be as helpful as possible in opposing the enactment of the so-called Humane Pound Law.

The Bureau made its usual donation in May to graduating medical students of complimentary copies of the pamphlet Animals in Research, including the article "The Dog's Gift to the Relief of Suffering," by Cannon and Drinker and the "The Ethics of Animal Experimentation" by John Dewey.

COOPERATION WITH LAY ORGANIZATIONS

National Congress of Parents and Teachers.—Progress continues toward more widespread use in many localities of the physicians' own offices for the examination of children in the Summer Round-Up. More localities are making arrangements to have physicians paid for their services as examiners. As authorized annually by the Board of Trustees, 300,000 examination blanks were printed, of which one half were donated by HYGEIA, the Health Magazine, and the other half by the national Congress.

At the annual meeting of the Advisory Committee for the Summer Round-Up, the following resolution was adopted:

> Glasses should not be fitted on the basis of such an examination (the eye examination in the Round-Up). An adequate examination for diagnosis of eye disease or defects of vision or to determine the necessity for glasses can therefore be performed only by a licensed physician.

During the year a survey was conducted by the Bureau of Health and Public Instruction of the opinions of fifty widely scattered general practitioners personally known to the Director with relation to the blank used in the Summer Round-Up of the Children. A few complaints had been received to the effect that the blank was too time consuming. A survey of opinion, however, brought forth thirty-five replies out of fifty letters and, of these, twenty endorsed the blank as it stood and fifteen recommended various changes, none of them of major significance. Only one letter indicated opposition to the whole idea of the Summer Round-Up, designating it as an approach to state medicine.

General Federation of Women's Clubs.—A meeting of the advisory committee was held at Washington in October. The meeting was largely routine. A special intra-organization program was planned for educating the club women in syphilis. Routine progress was reported in the cancer education campaign, the maternal and child welfare campaign and other health interests. The community health study was reported to have attracted practically no attention among local women's clubs after the first year (1935).

4-H Clubs.—At a meeting of the National Committee for Boys' and Girls' Club Work, better known as 4-H Clubs, in December 1937 there was offered rather severe criticism of the committee and its methods with special reference to unwise handling of the "healthiest boy" and "healthiest girl" contests, local, state and national. The Director of the Bureau, as a member of the committee, had previously offered objections to the methods used. This new criticism came from a subcommittee representing the United States Department of Agriculture and the Association of Land Grant Colleges.

During the year the Director of the Bureau challenged the authenticity of certain statements in relation to tuberculosis published in *4-H Club News* without consultation with the only physician on the committee; namely, the Director of the Bureau. It has been agreed that subsequent statements, medical in character or having a medical bearing, will be submitted for approval prior to publication.

Joint Committee on Health Problems in Education.—The Joint Committee, representing the National Education Association and the American Medical Association, under the chairmanship of Thomas D. Wood, M.D., has continued its work.

The principal activity in 1937, aside from the publication of routine technical reports, was the organization of a symposium on school health problems in connection with the meeting of the American Medical Association at Atlantic City. This symposium, though arranged too late to receive a place in the printed program of the American Medical Association meeting, nevertheless attracted several hundred physicians and the proceedings were published in their entirety in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. This is the first program connected with the Joint Committee's work which has been a part of the American Medical Association meeting. Its success indicates the desirability of repeating it, if not annually, at least frequently.

During 1937 the American Physical Education Association, an organization of teachers of physical education and of athletic coaches and including some physicians, became merged with the National Education Association Department of Health and Physical Education. The new organization is known as the "American Association for Health and Physical Education—A Department of the National Education Association." It is organized in three coordinate divisions dealing respectively with physical education, health and recreation. In each division are special sections. The medical section is in the division of health. Membership in the section is limited to members of the American Medical Association in spite of the fact that effort was made at the meeting to open the membership of the section to physicians employed in school health work even if not members of their local medical societies.

American Public Health Association.—The Director of the Bureau, having finished his term as chairman of the Section on Health Education of the American Public Health Association, remains for five years a member of the section council. Relationships of the Bureau with the section are quite satisfactory.

United States Children's Bureau.—Very little complaint has been received at headquarters relating to the functioning of Social Security health programs administered by state health departments under grants from the Children's Bureau. The attitude of present officers of the Children's Bureau is apparently friendly and cooperative. It appears that efforts will be made to enlarge the appropriation for maternal and child health work as indicated in a conference called at the Children's Bureau (October 19) at which opinion of representatives attending was solicited as to the advisability and necessity of larger child health and maternal health appropriations.

American Social Hygiene Association.—The outgrowth of the interest in syphilis dramatized by Surgeon General Parran on his appointment to be surgeon general of the United States Public Health Service continues at a high level. A number of books on the subject have appeared. HYGEIA has carried numerous articles, some of which have been made into reprints and are selling fairly rapidly. A National Social Hygiene Day was held in February 1937, being devoted largely to public addresses and articles in newspapers on the topic of syphilis. A second Social Hygiene Day is planned for February 1938 for the purpose of raising $500,000 to support the increased demands for services on the American Social Hygiene Association. In this project, state medical societies and local medical societies are being asked to participate. The Bureau has attempted, through the columns of the Organization Section of THE JOURNAL, to keep the profession informed relative to genuine versus pseudo social hygiene organizations.

COOPERATION WITH STATE AND COUNTY SOCIETIES

The Bureau continued, as in the past, to cooperate with county medical societies and with outside organizations by attempting (*a*) to function as a clearing house for health information and ideas and (*b*) to establish and further cordial relationships between the medical profession and other organizations working for similar purposes. For these purposes, the Director and the Assistant Director attended twenty conference meetings.

PERSONAL APPEARANCES

Personal appearances made by the Director in 1937 totaled eighty-seven addresses in addition to conferences attended. The Assistant Director made thirty-eight addresses. The total was 125. This is 36 per cent greater than in 1936. These appearances involved practically 40,000 miles of travel by railroad, automobile and busses. Appearances were made in twenty-four states. Forty engagements had to be declined because of conflicting schedules and for other reasons.

HYGEIA. CLIPPING AND LOAN COLLECTIONS

The clipping loan service of HYGEIA material, made into convenient collections and accompanied by a proposed outline for a speech, continued in 1937 to be a notable success. The number of loan collections sent out in 1936 was 230 and the distribution covered thirty-eight states. In 1937 the distribution was 375 collections. In two years physicians in every state in the union have been served, except in Maine and Nevada. The state of New Jersey, with the aid of recent back numbers of HYGEIA and of pamphlets of the Bureaus of Health and Public Instruction, Medical Economics and Investigation, has established its own loan collection service for physicians within the state and indications are to the effect that the Philadelphia County Medical Society will do the same thing in the same way. The Bureau will cooperate by referring to the appropriate local chairman all requests from New Jersey and, perhaps, from Philadelphia. This decentralization will reduce the apparent service rendered by the Bureau direct, but it is believed that it represents sound organization policy.

BUREAU PUBLICATIONS

The pamphlet publications of the Bureau were maintained as in past years by revising, dropping or adding as demand seemed to indicate.

The director of the Bureau contributed eighteen items and the Assistant Director three items to THE JOURNAL in 1937, including one editorial, eight current comments, one news item, two queries and minor notes, and nine items for the Organization Section. The Symposium on Health Problems in Education arranged at the Atlantic City session on behalf of the Joint Committee was published in full.

Publications originating in the Bureau but appearing in periodicals published elsewhere included twenty-seven magazine articles.

EXHIBITS

The Bureau cooperated, as in former years, with the Bureau of Exhibits in the preparation of exhibit material for use on various occasions.

The Bureau continues to furnish material for the numerous local traveling exhibits prepared by the American Medical Association Bureau of Exhibits and receives in return much valuable assistance from the Bureau of Exhibits. Close cooperation between the two bureaus is maintained at all times.

During 1937 the Directors of the two bureaus collaborated in preparation of a book entitled Health Education of the Public. With a foreword by the Editor of THE JOURNAL, this book was published by the W. B. Saunders Company.

Summary

The work of the Bureau of Health and Public Instruction has proceeded along established lines but reached a high peak in 1937. The dramatized radio program conducted with the cooperation of the National Broadcasting Company completed its second successful season in 1937. The nature of the program was changed in that it was particularly directed to the needs of students in senior and junior high schools, though an effort was made to maintain appeal to general public audiences. The radio library of the Bureau has been maintained for the use of state and local societies, and the library material was much more widely used in 1937 than in any preceding year.

The Bureau has cooperated as fully as possible with official agencies concerned with the protection of scientific research.

The Director of the Bureau has served as a member of official committees of a number of important lay organizations, including the National Congress of Parents and Teachers, the General Federation of Women's Clubs, the 4-H Clubs, the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, the Children's Bureau of the U. S. Department of Labor and other important organizations. The Bureau has also cooperated closely with the Bureau of Exhibits in the preparation of exhibit material.

The Director and the Assistant Director of the Bureau have appeared before a larger number of public audiences than in any previous year. The educational publications issued under the direction of the Bureau have been widely distributed. The number of inquiries received from lay persons increased during the year by approximately 15 per cent.

Bureau of Medical Economics

The movement toward the socialization of the necessities of life has thus far concerned itself almost entirely with but one of those necessities—medicine. Those who propose various devices to socialize medicine seen to assume that a very large percentage of the population is not receiving needed medical care. It is also assumed by these social reconstructionists that radical changes in the methods of distributing medical services are necessary if those who are not now receiving medical care are to be provided with such care. Moreover, these same reformers, many of whom are not medically trained, believe that the radical changes which they urge can be made without affecting the quality of medical care, without disrupting the processes of medical education and research, and without disturbing the close personal relationship between the patient and his physician—all of which are essential to medical progress and continued improvement in public health.

It appears that the proponents of drastic departure from the course of private medical practice are interested chiefly in the methods of organization, distribution and control of medical services which will provide a greater abundance of cheap medical care. They fail to consider the inevitable result which the cheapening and mechanization of medical services will have on the prevention and relief of illness. None of the utopian schemes that have been proposed, except a system of complete state medicine, would include all income groups of the population. Thus the problem of providing medical services for the indigent, the unemployed and those suffering from certain chronic conditions would remain as a separate task to be met and financed in an entirely different manner.

The many health and medical surveys made during recent years have recorded various percentages of the population in need of medical care. If these percentages are accepted as reasonably correct, only from 5 to 10 per cent of the population appear to be in need of medical care which, presumably, they are not now receiving. These studies also reveal that about one half of the population report no illnesses in any one year. The amount of medical services which this apparently well half of the population might properly use cannot be accepted as a condemnation of the present method of providing medical services. This is evidenced by the fact that more than 90 per cent of the persons in the sick half of the population are attended by physicians. Further evidence is the constant decrease in morbidity and mortality rates, which makes the United States one of the most healthful countries in the world. If interpreted literally, these figures do not present an appalling lack of medical care such as is usually reported by proponents of new methods of medical practice, who state that from one fourth to one half of the population is not receiving needed medical services. The available figures which purport to show the unfilled need for medical care and the statements made by many social reformers are obviously in sharp disagreement and prompt some queries as to the accuracy and source of information.

The American Medical Association has consistently maintained an interest in the availability and the quality of medical services. The several councils and bureaus of the Association have as their central function the protection of the quality of medical service by an appraisal of the various elements entering into that service. The American Medical Association has held itself ready and willing to discuss with qualified agencies the questions of need for medical services and the appropriate means to provide such needs. Thus far, only one direct official request for such a discussion and coordination of effort has come to the Association—that from the American Public Health Association.

STUDY OF MEDICAL CARE

The Board of Trustees, following a meeting of its Executive Committee with the representatives of the American Public Health Association in December 1937, passed resolutions which called for a determination of the need for medical services and, based on these findings, suggestions of preferable procedures to meet the need of persons in every county in the United States. This project is but a furtherance and extension of the encouragement which the Association has previously given to state and county medical societies to develop means by which all persons might readily obtain medical care at fees commensurate with their ability to pay. Already, 250 or more county medical societies have endeavored to meet their local needs by some arrangement to make medical service more readily available to the indigent and low income groups. Many of these medical society arrangements have been in operation a sufficient length of time to permit some evaluation of their desirable and undesirable features. Of considerable significance is the fact that each locality apparently requires a different arrangement to organize or coordinate its medical services.

This new project calls for concerted action on the part of medical societies to determine medical needs by seeking the assistance of individuals, agencies and organizations that have an interest in or are actually endeavoring to supply medical care. If thoroughly and conscientiously carried out, such a project should give much needed dependable information. When the county medical societies, in cooperation with the other agencies and organizations concerned with medical services, shall have collected the data pertaining to need for medical services, it will then be possible to recommend preferable procedures intended to meet that need. It is logical and desirable for the county medical society to serve, with the guidance of the state association, as the coordinating unit for whatever organizational arrangements may be devised. Many medical societies will probably desire some suggestions as to the methods that have shown the most promise of fulfilling needs in other communities. It is suggested that at least one of each type of the county medical society medical service plans now in operation should be carefully examined at once so that the American Medical Association will be in a position to give the latest and most complete data concerning organization arrangements for medical services to those county medical societies that request assistance.

There can be no question that this project gives promise of a thoroughgoing analysis of the adequacy or inadequacy of the present distribution of medical services and is a significant opportunity for medicine to devise efficient and ethical means to distribute medical services to all people on the basis of need rather than to small groups within the population according to political expediency or special interests. With real and sincere cooperation from individuals, agencies and organizations concerned with medical services in each community, the success of the project will be assured.

NEW FORMS OF MEDICAL CARE

Within the past year a great many plans for organizing medical services have been proposed or actually inaugurated. Most of these plans are conceived with the idea of offering "low cost" medical services to special groups of persons. Industrial medical care plans are offered for employees of a single company, cooperative or group health associations for groups of employees and their dependents, student health services for students, lodge plans for members of fraternal orders and resettlement medical care plans for clients of the Farm Security Administration, and other types of group payment or insurance plans are held out as essential to provide medical services for particular groups of persons.

It is possible to organize medical services either geographically or by some special grouping of persons. The use of the two methods of organization at the same time creates overlapping and duplication. The development of numerous small administrative units for the provision of medical services to groups of persons selected on some basis such as occupation or social interests is of very questionable wisdom. The geographic method of medical practice, by which all the residents in a community obtain their medical care directly from the physicians in that community, has proved its superiority over any other method yet devised. Under this method of distributing medical services, the patient is considered in the perspective of a human being subject to his entire environment rather than as a member of some restricted or cultural group. The particular interests of special groups of individuals in the community, such as employees, students, the indigent and the low income group, can be met by slight adjustments in the existing method of providing medical services and without necessitating a special administrative organization.

The reason prompting the development of isolated plans for medical care is the notion that some organizational arrangement will result in low cost services. A number of fairly reliable surveys have shown that medical services cost, on the average, about $25 to $30 per person annually. It is hardly possible that any organizational arrangement can lower this average cost except by excluding many services or by offering medical services of inferior quality. As a general rule, such plans do not offer the complete services claimed but exclude many expensive services and depend on special charges for necessary finances.

CONTRACT AND CORPORATION PRACTICE

Most of the plans offered under this head are nothing more than contract practice arrangements whereby physicians are induced to sell their services to a promoter, who in turn sells the services to prospective patients. The introduction of a third party in the provision of medical services transfers control over the quality of medical services to that third party. In most instances this third party is a corporation or association not amenable to examination of its ability to provide a good quality of medical care and responsible only to the extent of cash resources. The quality of medical services cannot be maintained if individual physician responsibility, assured by high standards of medical education and licensure and sustained by professionally ethical regulations of societies of physicians, is replaced with the limited nonmedical and usually nonethical responsibility of corporations and associations. Such agencies give no assurance that they will foster a medical service equal to that now given by duly qualified physicians in private practice.

It is unnecessary to disrupt the professional practice of medicine into a series of commercial institutional enterprises. Those who attempt to do so are too often motivated by false notions concerning the methods of distributing medical care, by unreliable or incomplete information concerning the lack of medical care, by a desire to make a place in the sun for themselves, or by selfish interests such as avoiding increases in wages and attempting to obtain better personnel relations.

Sufficient information has been accumulated on practically every scheme for organizing medical services to substantiate the claim that medical services of the same quality cannot be provided at any less cost by these schemes than in private medical practice. Likewise, there is no group of persons in a community which cannot obtain sufficient medical care by permitting each person the freedom to choose his own physician. Progressive developments in workmen's compensation, industrial medical care plans and student health services indicate that a plan solely for the payment of medical bills (without control of the services) which permits free choice of physician and free choice of hospital is not more expensive and does not interfere with the quality of medical services or with the private practice of medicine. Furthermore, such arrangements have the full cooperation of medical societies. Plans that depend on underbidding, advertising, solicitation and other practices which impair the quality of medical services or prevent the development of an improved service can never be justified. Poor medical care, even if it is cheap and plentiful, may be worse than no medical care at all. Medical cults, quacks and "patent medicines" make a certain type of service more readily available at low cost, but these services have been strongly denounced.

Collecting the average annual cost for medical services from each of a number of persons in the hope of relieving a few individuals from possible large medical bills—the insurance principle—is another feature of group payment plans which is so plausible in appearance that many persons have not taken pains to examine the practical effects of such an arrangement. First of all, a considerable charge must be added to the average cost for each person to provide for the administrative expenses of any insurance plan. Next is the impossibility of calculating in advance a premium that will provide for the costs of new developments in medical science. The result is an inevitable collision between the resources of the insurance system and the needs of the insured persons for new and indeterminate amounts of expensive medical services. Another difficulty is that each individual who pays into the insurance fund will make a conscious effort to obtain as much medical service as possible even if he does not actually need medical care. The medical profession has never objected to the insurance principle as a method of providing *cash* payments to individuals for medical and hospital bills such as the health and accident insurance policies which have been issued by insurance companies for almost a hundred years. The medical profession does object to the attempt of any corporation or association to provide, control or manipulate the actual medical services. Reputable insurance companies have found that it is undesirable both in the interests of their policyholders and for financial reasons to attempt to provide actual medical services through contract physicians or hospitals. It is hoped that the public and those who have been misled by the promises of certain new forms of medical care will finally realize that any plan which destroys professional control over the quality of medical services will only result in a low grade medical service which in itself may have as many potentialities for danger to health and life as the illness from which the individual seeks relief.

GROUP HEALTH ASSOCIATION, INC.

Another development in methods of distributing medical service is found in a certificate of incorporation filed in the office of the Recorder of Deeds of the District of Columbia, Feb. 24, 1937, on behalf of Group Health Association, Inc. The certificate makes eligible for membership every employee of every branch of the United States government other than officers and enlisted men of the Army and Navy. It attempts to authorize the association

> To provide, without profit to the corporation, for the service of physicians and other medical attention and any and all kinds of medical, surgical and hospital treatment to the members hereof and their dependents, and the construction and operation of a clinic and medical office building, and the construction and operation of a hospital in the manner permitted by law, for the members hereof and their dependents, and the operation of a drug store or pharmacy, and the providing of nurses and of drugs and remedies for the members hereof and their dependents, and the furnishing of all forms of hospital service and attention to the members hereof and their dependents, and in general the giving to the membership of this association and their dependents of all forms of care, treatment or attention that may be required by the sick or in the prevention of disease.

In the report from the Committee on Appropriations (to accompany H. R. 8837) the following statement appears:

> Entirely irrespective of the merits of the work proposed to be done under the Group Health Association, for which the Home Owners' Loan Corporation recently made a contribution of $40,000, the committee is of the unanimous opinion that the expenditure was one not authorized by law and that such expenditures should not hereafter be made without specific legal authority.

According to newspaper reports, the Federal Home Loan Bank Board guaranteed an advance up to $100,000 to get the association under way.

In order, however, that the corporation might supervise and direct the activities of the association, the Home Owners' Loan Corporation insisted that it be given authority to name two of the trustees of the Group Health Association.

The form of application for membership provided by Group Health Association was arranged to give the member the option of paying his dues personally or of assigning to the association so much of his government salary as may be necessary for that purpose and requesting his "employer," the government of the United States, to deduct semimonthly the amount assigned and remit it to Group Health Association, Inc. As this assignment form is also an application for membership and obviously belongs to the files of the association, an additional assignment form has been provided, presumably to be filed with the paymaster of the Federal Home Loan Bank Board or the particular affiliate of the board by which the member of the association is employed. This form specifically assigns, sets over and directs the Home Owners' Loan Corporation and the Federal Savings and Loan Insurance Corporation to pay Group Health Association the amount due to that association, out of any salary or wages due or to become due to the member so long as membership continues.

The United States district attorney for the District of Columbia has held that the association is engaged unlawfully in the practice of medicine and the insurance commissioner has

held that it is engaged unlawfully in carrying on the business of insurance. The status of the association with respect to these matters is at present writing before the courts for determination. Although the activities of Group Health Association, Inc., have thus far been limited to the District of Columbia and adjacent areas in Maryland and Virginia, the articles of incorporation in no way limit the area in which it may function. Membership in the first instance was restricted to officers and employees of the Home Owners' Loan Corporation and its affiliates, but more recently members have been accepted from other branches of the government.

So far as is known this is the first time that any governmental agency, federal or state, has undertaken through the use of public funds to subsidize a private lay corporation to provide medical services in competition with legitimate practitioners of medicine. Although in the present instance the granting of this subsidy has been held to be without authority of law, there seems to be no way which the taxpayers in the country can recover their misapplied money.

GROUP HOSPITALIZATION

Beginning in 1933, several publications of the Bureau of Medical Economics dealing with group hospitalization plans have emphasized that medical services should not be included in hospital service contracts. In the 1935 Annual Report of the Bureau, it was stated:

> . . . The medical profession is opposed to any plan that will destroy the basic features of medical service or will permit hospitals to enter the practice of medicine. If hospitals are permitted to include medical care in their contracts for hospital service, the precedent is set for institutionalized contract medical practice with all its destructive effects on the art and science of medicine.

The report of the Judicial Council for the same year also stated:

> Whether the scheme [meaning the group hospitalization] is or is not financially or economically sound is not the problem of our organization, but it is our business to see that the furnishing of medical service is not included in the sale of insured hospital accommodations. This can be done if a strong stand is taken and maintained by the organized medical profession, which must keep a watchful eye to see that medical care is not initially or later included when the usual sales efforts demand increased benefits to purchasers.

At the annual meeting of the House of Delegates in Kansas City, May 11-15, 1936, three resolutions were presented that dealt with group hospitalization plans and medical practice in hospitals. The first of these, presented by the Section on Radiology, condemned the attempts of lay groups to provide diagnostic medical services along with and as a part of hospital services and resolved that the Council on Medical Education and Hospitals be authorized to take steps that would result in the practice of medicine being conducted by physicians and not by hospitals. The second resolution, from California, also denounced the attempt of organized lay groups to provide diagnostic medical services as a part of hospital services and disapproved of the division of any branch of medicine into technical and professional portions. The third resolution, from Pennsylvania, insisted that the practice of radiology is the practice of medicine and disapproved of the proposal of certain hospitals to divide the practice of radiology into professional and technical services.

These three resolutions were consolidated in the following report of the Reference Committee:

> It reiterates the principle enunciated by the House of Delegates at Cleveland in 1934 "That the practice of radiology, whether for diagnostic or therapeutic purposes, constitutes in fact the practice of medicine." The action of the House of Delegates in 1925 establishing a section on radiology confirms this principle.
>
> It further recommends that all services connected with the practice of radiology be under the direct control and supervision of the medical profession, and this same principle pertains to other technical and professional services.

This report was adopted by the House of Delegates.

Again in the 1936 annual report of the Bureau it was necessary to report that "few, if any, of the plans exclude all medical services from their group hospitalization contracts" and that "these prepayment plans for hospital care show a distinct tendency to place hospitals themselves in the field of medical practice." Based on a complete study of group hospitalization plans, ten principles were suggested, the fourth of which was as follows:

> The subscriber's contract should exclude all medical services—contract provisions should be limited exclusively to hospital facilities. If hospital service is limited to include only hospital room accommodations such as bed, board, operating room, medicines, surgical dressings and general nursing care, the distinction between hospital service and medical service will be clear.

This and the other principles were adopted by the House of Delegates in Atlantic City in 1937 as follows:

> That portion of the report of the Board of Trustees devoted to the Bureau of Medical Economics goes into careful detailed consideration of the question of group hospitalization. Your reference committee commends the principles stated in that section of the report pertaining to group hospitalization and recommends the adoption of those principles as the policy of the American Medical Association, and it is urged that medical societies in those communities in which group hospital insurance is thought to be necessary be guided by these principles to the end that such schemes confine their contract benefits strictly to the facilities ordinarily provided by hospitals; viz., hospital room, bed, board, nursing, routine drugs. It is suggested that the Bureau of Medical Economics continue to collect factual and statistical data concerning group hospital insurance experience and make these facts available from time to time.

In reply to a resolution from Ohio (1937) asking for a clarification of the policy of the American Medical Association with regard to what medical services should not be included in a group hospitalization contract, the reference committee reported as follows:

> It is recommended, therefore, that the contract benefit provided by group hospitalization insurance should be limited to the room, bed, board, nursing facilities ordinarily provided by hospitals, and routine medicines.
>
> Your reference committee would refer to principle 4 [as already given] which was adopted by this House of Delegates. In that paragraph the limitations of hospital service are well defined. Your reference committee reaffirms this definition of hospital care and recommends its application to contracts for group hospitalization. In regard to certain benefits offered by many hospital insurance plans, combining professional and technical services, your reference committee is in complete sympathy with those who would make every possible provision to prevent inclusion of any and all types of service involving medical care.

This report was adopted.

Shortly after the 1937 action of the House of Delegates was made public, editorials appeared in hospital magazines which seem to indicate a complete disregard on the part of certain hospital groups for the desires and recommendations of the medical profession as expressed by the House of Delegates. Excerpts from these editorials are as follows:

> Ten years hence, what will the verdict of history be on the action of the House of Delegates of the American Medical Association last June, when it attempted to set up a barrier between "medical" and "hospital" services and laid down the law to group hospitalization plans? . . .
>
> Is it the prerogative of the medical profession to decide on hospital policies all by itself? As a practical matter, well organized group hospitalization plans that have already included x-ray, anesthesia and laboratory services, with the cooperation of their local medical societies, are likely to go ahead as they have been going.
>
> No one is justified, so far as the patient is concerned, in taking the hard-boiled attitude that hospital care has any limitations as far as the welfare of the patient is concerned. Whether he is a charity patient, or one who pays in part or in full for his care, he is entitled to every attention in consonance with the established standards which the medical profession and the hospitals unite in maintaining. The patient, whatever his economic status, is entitled to receive the necessary service of the clinician, the surgeon, the pathologist, the radiologist, the nurse, and the lay people who attend him. All these services are a part of the hospital, coordinated by the hospital for the benefit of the patient. Hospitals must provide this service. They cannot accept the dictation of a minority of medical men who place their own financial advantage above the welfare of the patients under their care.
>
> At the Atlantic City Convention of the American Medical Association last June, resolutions were adopted calling on group hospitalization plans to furnish "hospital care" only and specifically to exclude laboratory service, x-ray, and anesthesia. Are several hundred hospitals, several thousand trustees, and several hundred thousand citizens who are paying members of these plans to be under dictation from a national agency? The good sense of staff physicians, of local medical societies, and of hospital trustees and administrators will prevent this being the case.

In several other respects, studied attempts have been made to discredit the recommendations of the House of Delegates that medical services be excluded from hospital service contracts.

In verification of the fact that the House of Delegates of the American Medical Association is truly representative of

the majority of physicians in the United States—if such verification is needed—state medical societies in twenty-one states have passed resolutions or adopted reports of committees recommending that medical services be excluded from hospital service contracts; whereas in only one state can the medical society be considered as approving of the inclusion of medical services in group hospitalization contracts, and this only by inference because the society has endorsed a group hospitalization contract which includes medical services. In the remaining states this problem has not arisen or no definite official action has been taken, but the attitudes expressed and the resolutions adopted on similar problems indicate that the inclusion of medical services in a hospital service contract is not looked on with favor. Many county medical societies have also taken action against the inclusion of medical services in group hospitalization contracts. It can be accepted that the conviction of the medical profession throughout the United Sates is that medical services should not be included in hospital service contracts.

In chapter IV of the study "Group Hospitalization" is a full discussion of the attitudes toward the inclusion of medical services in group hospitalization contracts taken by societies of radiologists, pathologists and anesthetists, as well as by associations of hospitals. The effect that the inclusion of special medical services such as anesthesia, pathology and radiology in a hospital service contract will have on the practice of these medical specialties is also discussed in this study. Three thousand copies of the study have been distributed by request to hospital administrators, physicians and lay persons.

Two proposals were suggested in the study to avoid the difficulties created when hospital services are sold in a contract. The first is to restrict the benefits of the hospital insurance contract exclusively to hospital facilities such as bed and board, operating room, medicines, surgical dressings, and general nursing care. The second proposal is that all benefits should be paid in cash to the subscriber, who could then purchase his hospital service without disturbing or altering the relations between physicians and hospitals. The best arrangement for a hospital service contract depends on the many factors involved in the particular locality, but it is clear that no form of medical service should be included in such contracts. There are several indications that the special medical services in contracts now sold by group hospitalization plans may be removed from new contracts and from the renewal of existing contracts.

Nevertheless, proponents of group hospitalization plans have insisted that certain anesthesia, pathologic and radiologic services can be included because the hospital reimburses anesthetists, pathologists and radiologists in accordance with previously existing financial arrangements. They seek to interpret the principle that medical services should not be sold in a hospital service contract as a prohibition against hospitals providing anesthesia, pathologic and radiologic services for all patients as follows:

> . . . If the general principle as laid down by the House of Delegates is sound, what is the logic of applying it to group hospitalization only? And if it is to be applied to all anesthesia, x-ray and laboratory services for all patients, why, then the hospitals are in for a considerable revamping of their professional, administrative and financial organizations, that is, they are in for a reorganization in so far as they decide to reorganize.

This larger problem of the relations between hospitals and physicians concerning the practice of medical specialties in hospitals and, in particular, the method of remuneration for such medical specialties has already been given considerable attention by the House of Delegates and is now the subject of an investigation by the Bureau of Medical Economics. This problem, however, should not be allowed to confuse the principle which has been established concerning group hospitalization contracts; namely, that medical services should not be included in such contracts.

EXPANSION OF HOSPITAL FUNCTIONS

Since the beginning of the twentieth century there have been tremendous changes in the traditional function of hospitals. Hospitals have always been regarded as specially equipped institutions for the hospitalization of patients who could not be treated satisfactorily in their homes or in the physicians' offices. Now hospitals are beginning to assume a dominant place in the practice of medicine and in the delivery of medical care to the American people. In this newer role hospitals have, unfortunately, been assisted or encouraged by some members of the medical profession. The importance of the individual physician as the primary figure in medical care is obscured by a trend toward institutionalized medicine with the hospital as the central figure.

The first step in this direction was made when hospitals began the operation of pay clinics and outpatient departments. The original concept that outpatient services and part-pay clinics should be maintained only in teaching institutions where patients were needed for clinical material or only for indigent patients was soon forgotten and outpatient departments and clinics were developed with little regard for the disturbances they caused in the practice of private physicians. Further steps toward the practice of medicine by institutions were taken when hospitals adopted "all-inclusive rate" plans such as the "middle rate" plan, whereby patients are admitted on an adjusted fee basis including medical care as well as the use of hospital facilities, or the "flat-rate" plan, under which patients are admitted for diagnostic services and pay a flat fee covering the complete cost of all diagnostic medical services and use of the hospital facilities. The latest step has been the sale of group hospitalization contracts which offer purchasers the services of medical specialists as well as the use of the physical facilities of the hospital.

MECHANICAL AIDS IN MEDICAL PRACTICE

Other factors have been responsible for or have encouraged these changes. Perhaps the main factor is the widespread belief that machinery is revolutionizing the practice of medicine and is dispensing with the need for human judgment. The introduction of instruments for more precise diagnosis such as the x-rays, the electrocardiograph, metabolism testers, and other mechanical devices for laboratory tests, has led many persons to believe that exact diagnosis can be given without depending on the knowledge, experience and judgment of a physician. As a consequence, the accumulation of new and expensive equipment in hospitals is apparently thought by many to be more essential to good medical service than the personal ministrations of physicians.

A corollary of the tendency to emphasize mechanical devices is the attempt to standardize medical procedures and to provide them on a low cost, mass production scale. Such attempts are based on the belief that a human being can be regarded as a uniform, standardized organism. This is a fundamental fallacy, as no two individuals react in the same way to the same disorder. When an institution concerned with medical services tries to assume or actually adopts any of the characteristics peculiar to a great industry such as advertising, large capital investment or mass production, a deterioration in the medical services results. There is no way to standardize the infinite variety of human beings in health and disease.

As a consequence of the changes in the function of hospitals, medical practice in hospitals has now reached a stage somewhat analogous to the condition of medical education in 1904. To improve the then existing situation in medical education, the American Medical Association established an ideal standard of medical education and gained world renown through the council on Medical Education and Hospitals for raising medical education toward that standard. Existing practices or prevailing policies of medical education were not accepted as controlling; instead an ideal standard that would foster an ever improving quality of medical education was adhered to. This ideal standard has not yet been fully attained but no one can deny its value in improving the quality of medical services in the United States.

PRESENT TENDENCIES TOWARD THE PRACTICE OF MEDICINE BY HOSPITALS

The present situation in the practice of anesthesia, pathology and radiology in hospitals and the potentiality of increasing the number and variety of special medical services controlled by hospitals call for the establishment of a similar ideal standard designed to permit a constant improvement of practice in hospitals.

The action of the House of Delegates in 1904 was directed against the practice of medicine by incompletely trained physicians, cultists, quacks and lay persons. Today action must be directed against the attempt of corporations and associations to practice medicine by employing nurses and technicians under the tacit supervision of salaried physicians. The years of work that have been spent in raising the standards of medical education will be nullified if lay persons, nurses and technicians on the pay roll of a corporation or association are now permitted to give medical services.

To offer a lower cost service, hospital administrators and even some physicians have delegated many anesthesia, radiologic and pathologic duties to nurses and technicians. Such a utilization of nonmedical personnel may be permissible provided the quality of the medical service is not adulterated. It is false economy to place a portion of the practice of medicine in the hands of incompletely trained persons if the quality of the service is cheapened or if the development of an improved service is retarded. The service offered by the indiscriminate use of nonmedical personnel may cost less, but it will be of less value in preventing or overcoming disease, and, what is more important, there will be no encouragement for medical students to train themselves for such services if these fields are being filled or usurped by medically untrained persons receiving small incomes. The opportunities for physicians to establish desirable practices in these fields are becoming so limited that they turn to other types of practice. The result is an underdevelopment of the scientific possibilities of the practice of anesthesia and pathology. The line between the functions which may be performed by nonmedical persons and the functions which can properly be performed only by a physician may be difficult to draw. It may be reasonable to believe that the utilization of nonmedical persons only under the *direct* and *immediate* supervision of qualified physician-specialists will permit lower costs without endangering the quality of the service or retarding the improvement of the practice of medical specialties in hospitals.

The problem to be faced is: Shall more and lower-cost special medical services in hospitals be performed by persons less highly trained than physicians, or shall the quality of medical services be maintained by insisting that medical services be performed only by or under the immediate direction of properly trained physicians? Undoubtedly, the latter is more desirable. Entirely apart from the legal aspect of the question, there is not sufficient evidence that the people of the United States are unable to buy adequate medical services of a quality offered by competent physicians to warrant an adulteration of medical services by permitting corporations, nurses, technicians or lay persons to practice medicine.

Whatever antagonism has developed between hospitals and physicians over group hospitalization plans is but an outgrowth of already existing unsatisfactory relations between hospitals and physicians. The pressure that has been placed on hospital administrators to find some source of income to finance their large capital investments and to continue to provide extensive free services has led many hospital administrators to adopt policies deleterious to the entire practice of medicine. Some of these are solicitation of patients, advertising, the entrenchment of nurse anesthetists, the placing of more and more of the practice of radiology in the hands of incompletely trained lay technicians, and the forcing of pathology from its rightful position in the practice of clinical medicine.

All these policies are undertaken for the essential purpose of increasing hospital revenue to permit the continuation of the services rendered to the residents of the community. Sympathy must be expressed for the financial difficulties faced by hospitals, and all just means of financial assistance should be encouraged. Nevertheless, the improvement of hospital finances must not be at the expense of the quality or the opportunities of medical practice.

It is unethical, and therefore contrary to good public policy, for hospitals to participate in the practice of medicine in order to obtain an income to finance other hospital activities or to attempt to lower the cost of special medical services by methods that impair the quality of the service or prevent the development of an improved service. Where such a situation exists the patients may be overcharged for the medical services of the medical department, the medical specialists may be receiving an insufficient income, or the services may not be maintained at a proper standard because of the use of cheaper technical assistants or because of inadequate equipment or insufficient or underpaid personnel. The proper method of remuneration for the hospital and the physician should enable the hospital to provide adequate building, equipment and personnel without necessitating an attempt to control or to employ physicians and should permit the physician to schedule his charges so as to make it possible for all patients to have easy access to necessary special medical services. In keeping with the ethics of the medical profession, both hospitals and physicians must place service first and financial considerations second.

QUALITY OF MEDICAL CARE MUST BE MAINTAINED

The present high plane of medical practice is largely the result of constant supervision of the practice of medicine by organized societies of physicians. It does not appear that any other organization is so capable of developing the practice of medicine to an increasingly higher plane of service. The public, as well as all the agencies in the medical field, look to the medical profession for improvements in the practice of medicine. A resolution by a national hospital association concluded that:

> . . . the medical profession must be accorded predominant influence in the medical activities of all institutions giving health and sickness care and, therefore, the hospital members of this association commit themselves to the policy that the rights, duties and privileges of the medical profession be considered directive and authoritative in hospital science and service.

The turmoil between hospitals or agencies representing hospitals and national societies of anesthetists, of pathologists and of radiologists cannot continue without harmful effects on the practice of medicine in hospitals. It is of utmost importance for the House of Delegates to outline the steps that will lead those interests now in conflict to a common ground of understanding. The future course of the practice of medical specialties in hospitals will be largely dependent on the solution of the present difficulties in the relations between hospitals and physicians.

WORKMEN'S COMPENSATION

The period since 1930 has been one of exceptional developments in workmen's compensation legislation. Improvements in the relations with organized medicine in regard to medical care are particularly noticeable. The trend which has existed since the beginning of workmen's compensation legislation in the direction of increasing the amount of medical services to injured workers has proceeded at an accelerated rate. The inclusion of occupational diseases is especially significant; since 1930, fourteen states have included or increased the coverage for such diseases. A supplement to the publication "Medical Relations Under Workmen's Compensation," entitled "Developments in Workmen's Compensation since 1930," recounts these recent changes.

Even more significant, from the point of view of the medical profession, is the tendency to seek the direct cooperation of state medical societies in the administration of compensation laws. In New York State an act—significantly known as the "Medical Abuses Act"—has thrown the responsibility for determining the competence of physicians admitted to care for compensation cases on the state and county medical societies. Each county society is required by law to prepare a panel of all those considered competent to care for such cases, and this panel, when approved by the compensation officials, becomes a part of the administration machinery. Injured workers have free choice among all physicians approved by the county medical societies and placed on the panel. The law has been in operation a little over a year and has been approved by the supreme court.

Similar legislation is being considered in several other states. In some fourteen states the medical society is at least semiofficially recognized, usually through a committee of the state medical society, as an organ of administration. In some states such a committee passes on all contested cases and its opinion is accepted as final. In others it is directly

consulted and its approval generally accepted in the formation of panels of physicians, among whom there is free choice. In numerous states committees of either state or county medical societies charged with the duty of adjusting medical bills have been approved by insurance carriers and administrators.

These developments are apparently approaching a solution of some of the problems that have given rise to the sharpest conflict between the medical profession and compensation carriers and administrators. Freedom of choice is now being granted workers from lists of physicians whose competence is vouched for by organized medicine. The question of the fairness of medical bills is being left to the decision of committees of state and county medical societies. Whereas a previous study showed that in many states such conflicts led to undesirable friction and difficulties, information from both administrators and state medical societies now uniformly indicates that such difficulties are being adjusted and both sides speak frequently of the excellent relations now existing.

INSURANCE MEDICAL DIRECTORIES

At the annual meeting of the House of Delegates of the American Medical Association in 1936, a resolution was adopted condemning the listing of a physician's name for a fee in a directory which indicates his specialty and his availability for insurance and compensation work and for other professional services. At the time of the adoption of this resolution, at least fourteen concerns were publishing such insurance medical directories and were soliciting physicians for a listing of their names on the payment of a $10 to $75 fee. In January 1937 an article published in the Organization Section of THE JOURNAL called attention of physicians to the resolution, to the sales devices used by the publishers of insurance medical directories and to the inadvisability of paying a fee for a listing in such directories.

Despite the fact that the listing of a physician's name in an insurance medical directory was condemned as an unethical, indirect solicitation of patients, and despite the fact that such directories mainly serve the profits of the publishers and are of little benefit to physicians and insurance companies, many physicians continued to support medical directories. In September 1937 a second article published in the Organization Section of THE JOURNAL gave the results of a survey of 220 insurance companies in the United States and Canada—representing all types and sizes of companies. This survey showed conclusively that insurance medical directories are not used in the selection of insurance examiners. The directors of medical departments of insurance companies have found that there is no real selection of physicians in such commercial directories and for that reason they employ independent methods to determine the qualifications of physicians as insurance medical examiners. Most insurance company officials have learned that the physician who subscribes to these commercial lists may have no particular qualifications for insurance service other than his willingness to have patients referred to him and his desire to collect a fee.

Several of the publishing concerns have now discontinued their insurance medical directories and others are considerably less active. In one locality physicians caused the arrest of a salesman for an insurance medical directory on the grounds of his obtaining money through misrepresentation. Bona fide directories of physicians, published by the American Medical Association, by state and county medical societies and by well established organizations do not ask any entrance fee from the physicians listed therein. These directories adequately fill the needs of insurance companies for lists of physicians, by locality and type of practice, to supplement the regular procedure followed in the selection of insurance medical examiners.

A considerable number of requests are still received from physicians concerning the desirability of paying a fee for a listing in a directory purported to be used for selecting insurance medical examiners. It is hoped that the information contained in the two articles which appeared in THE JOURNAL and are available in reprint form entitled "Medical Directories" will be widely utilized to prevent physicians from being victimized by publishers of pay-as-you-enter insurance medical directories.

OTHER ACTIVITIES

As measured by the volume of correspondence received during the year, physicians, lay persons and administrators of various agencies showed the greatest concern over group hospitalization plans, insurance companies (particularly malpractice insurance), contract practice plans, socialized medicine, and workmen's compensation in the order mentioned. It is significant to notice an apparent subsidence of concern over health insurance, as indicated by the Bureau of Correspondence.

State and county medical societies were especially interested in obtaining complete information about group hospitalization plans in operation and analyses of proposed plans. Medical societies also desired information concerning the method of organization and operation of professionally controlled credit and collection bureaus. The information that has been collected from such bureaus will be made available in the Organization Section of THE JOURNAL. There is some indication that medical societies are now taking more interest in student health services. Many copies of the report "University and College Student Health Services" were distributed to state and county medical societies.

Many articles and abstracts pertaining to current medical economic problems were prepared for the Organization Section of THE JOURNAL.

Representatives of the Bureau traveled to twenty-two states for speaking engagements or conferences in the interests of state and county medical societies. The Bureau also cooperated with the Bureau of Exhibits in the preparation of material to be exhibited at meetings of state and county medical societies and of other groups such as the American College of Surgeons.

Summary

***Survey of Need for Medical Care.*—Within recent years there has been considerable agitation for socialization of medicine by some grandiose system of organizing, distributing and controlling medical services. As a result, many persons have been misled into the belief that medical services in the United States are grossly inadequate despite the fact that in many health and medical surveys only about 10 per cent of the population have been shown to be in need of medical care which they presumably desire but are not receiving, that 90 per cent of all sick persons are attended by physicians, and that the morbidity and mortality rates rank the United States as one of the most healthful countries in the world.**

Consistent with the interest which the American Medical Association has always maintained in health and medical matters, the Board of Trustees of the American Medical Association passed resolutions calling for the determination of the actual needs for medical services in every county in the United States. All county medical societies, in cooperation with other agencies and organizations concerned with medical services, will be encouraged to collect data pertaining to need for medical care and to recommend preferable procedures to meet that need. This project is but a furtherance and extension of the encouragement which the Association has previously given to state and county medical societies to develop means by which all persons might readily obtain medical care at fees commensurate with their ability to pay.

***New Forms of Medical Practice.*—A large number of plans have been proposed or actually inaugurated for the purpose of offering "low-cost" medical service to some special groups of persons. The creation of special administrative organizations for every social, industrial and cultural group will necessarily mean a maze of small administrative units. The desirability of such a method of distributing medical services is extremely doubtful from the point of view both of economy and of good medical practice.**

Sufficient evidence has been accumulated on practically every scheme for organizing medical services to disprove the claim that some organizational arrangement can

lower the cost of good medical services. Certainly no system of collecting payments for medical care can lower the average cost of $25 to $30 per person annually unless many essential services are excluded or medical services of less than average quality are offered. Plans that depend on underbidding, advertising, solicitation or similar practices to provide cheaper services impair the quality of medical service and prevent the development of an improved service.

Group Hospitalization.—The House of Delegates of the American Medical Association, state and county medical societies, and national societies of specialists have all recommended that medical services be excluded from group hospitalization contracts. The medical profession is convinced that the inclusion of medical services "in kind" in group hospitalization contracts will have an undesirable effect on the practice of medical specialties in hospitals, and therefore on the quality of the services rendered. Two proposals have been suggested as a solution to the problem of medical services in group hospitalization contracts: (1) restrict the benefits of the contract exclusively to the use of hospital facilities such as bed and board, operating room, medicines, surgical dressings and general nursing care; and (2) pay cash benefits directly to the insured for all medical services. Several group hospitalization plans now exclude medical services or offer cash benefits for such services, and the indications are that other plans will do likewise.

There is need for the House of Delegates to adopt a standard for medical practice in hospitals which will permit the constant improvement of medical services. The years of work spent in raising the standards of medical education will be nullified if hospital corporations and associations are permitted to sell medical services to patients by employing lay persons, nurses and technicians to render certain medical services under the tacit supervision of salaried physicians.

Workmen's Compensation.—Since 1930 there have been several exceptional developments in workmen's compensation. Outstanding is the tendency to seek the direct cooperation of medical societies in the administration of workmen's compensation laws. In an increasing number of states, injured workmen are now being allowed freedom of choice of physician from lists of physicians vouched for by medical societies. A report entitled "The Developments in Workmen's Compensation since 1930," which recounts these changes, is now appearing in the Organization Section of The Journal.

Insurance Medical Directories.—A considerable number of requests are still being received from physicians concerning the desirability of paying a fee for a listing in a directory purported to be used for selecting insurance medical examiners. In 1936 the House of Delegates adopted a resolution condemning the listing of a physician's name for a fee in a directory which indicates his specialty and his availability for insurance and compensation work and for other professional services. The information contained in the pamphlet "Medical Directories," if utilized, should prevent physicians from being victimized by publishers of pay-as-you-enter insurance medical directories.

Other Activities.—As measured by the volume of correspondence, the most interest was shown in group hospitalization plans, insurance companies, contract practice plans, socialized medicine and workmen's compensation. A noticeable subsidence of concern over health insurance occurred.

Many articles and abstracts pertaining to current medical economic problems were prepared for the Organization Section of The Journal. Representatives of the Bureau attended meetings in twenty-two states for speaking engagements and conferences or to exhibit medical economic material.

Bureau of Investigation

While the larger part of the work of the Bureau of Investigation is conducted through correspondence involving the receipt and answering of from ten to twelve thousand communications a year, the Bureau of Investigation has continued its cooperation with medical societies and other professional groups, with teachers, with health departments and with other organizations interested in sound medical practice and in health education.

Exhibit material has been supplied on request. Each year the number of inquiries received from laymen shows a distinct increase, most largely accounted for by requests received from students whose teachers and textbook references direct them to the Bureau of Investigation of the American Medical Association for information.

The publishers of newspapers and magazines and the operators of radio broadcasting stations and of advertising agencies continue to call on the Bureau for information regarding advertising, and charitable and educational institutions and rating agencies frequently avail themselves of the services of the Bureau. The utmost cooperation has been offered to various agencies of the federal government, including the Post Office Department, the Food and Drug Administration, the Federal Trade Commission and the Federal Bureau of Investigation, as well as Better Business Bureaus and official departments of municipalities. All these agencies have reciprocated in replying to inquiries addressed to them by the Bureau of Investigation.

Dr. Frank J. Clancy, who succeeded Dr. Arthur J. Cramp as director of the Bureau, resigned Oct. 1, 1937, in order to return to the private practice of medicine. During the year, and prior to his retirement as director, Dr. Clancy appeared before twenty audiences in widely separated parts of the country for the purpose of discussing important subjects of popular interest with which the work of the Bureau is directly concerned. During the year, twenty major articles dealing with as many subjects were prepared by the Bureau and published in THE JOURNAL.

The demand for pamphlets and leaflets pertaining to frauds in medicine and to quackery was fully sustained during the year. Some of the older pamphlets issued by the Bureau were revised and new ones were added to the list available for distribution.

Summary

The work of the Bureau of Investigation has been continued along the usual lines. From ten to twelve thousand direct communications are answered by the Bureau each year. There is a constant increase in the number of inquiries received from laymen. The Bureau has continued its cooperation with medical societies and other professional groups and with various official agencies of federal, state and city governments. An increasing number of inquiries come from students in universities, colleges and schools. The director of the Bureau actively participated during the year in the field work of the Association. The usual demand for the pamphlets of the Bureau has been fully sustained.

Bureau of Exhibits

The report of the Bureau of Exhibits is presented under the following headings:

The Scientific Exhibit
Association Exhibits
Exposition Exhibits
Motion Pictures

The work of the Bureau of Exhibits involves cooperation with numerous agencies. The Scientific Exhibit is conducted with the advice of the committees of the fifteen sections of the Scientific Assembly and requires much correspondence both with the committees and with the secretaries of the sections. Association exhibits present the work of the various councils and bureaus of the headquarters group and activities in this connection require frequent consultations with those councils and bureaus. Requests for exhibits from lay organizations are

presented through county or state medical societies, thus furnishing frequent contacts with those societies. The able assistance of all these groups has contributed greatly to the success of the work of the Bureau and appreciation is hereby expressed.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at the 1937 session was the largest in the history of the Association. The floor space in that part of the auditorium which was assigned to exhibits was crowded to capacity, requiring the use of the stage and of corridors on either side of the auditorum. One of the increasing problems of the Scientific Exhibit is to provide enough space to accommodate the crowds constantly in attendance. Approximately 50,000 square feet of floor space was required at the Atlantic City session.

Total Exhibits, 1937.—There were 319 signed applications for space in the Scientific Exhibit at the Atlantic City session. Of these 249 were accepted and seventy rejected or withdrawn (29 per cent). The total number of exhibits shown was 254, divided as follows:

Section exhibits	194
Symposium on heart disease	25
Educational group	25
A. M. A. headquarters group	5
Motion picture booths	3
Special (subsidized) exhibits	2
Total	254

Although the number of exhibits in 1937 exceeded those of former years, the ratio for the attendance was almost exactly the same as in years past, 38.4 persons per exhibit.

Section Exhibits.—The fifteen sections of the Scientific Assembly presented 194 exhibits, an average of thirteen each. The largest number shown was twenty-six, by the Section on Surgery, General and Abdominal, while the smallest number was eight, by the Section on Urology and the Section on Nervous and Mental Diseases.

Each section appointed a representative to assist in the matter of obtaining noteworthy exhibits in the various fields of medical endeavor. These representatives did excellent work, but some produced so much material that some embarrassment was created by lack of available space and facilities for handling.

Exhibits Presented by Sections of the Scientific Assembly

	Atlantic City, 1937
Practice of Medicine	18
Surgery, General and Abdominal	26
Obstetrics, Gynecology and Abdominal Surgery	10
Ophthalmology	11
Laryngology, Otology and Rhinology	9
Pediatrics	9
Pharmacology and Therapeutics	9
Pathology and Physiology	17
Nervous and Mental Diseases	8
Dermatology and Syphilology	12
Preventive and Industrial Medicine and Public Health	14
Urology	8
Orthopedic Surgery	11
Gastro-Enterology and Proctology	18
Radiology	14

The Section on Practice of Medicine was represented by Fred M. Smith, Iowa City. Twenty-seven applications were presented, of which eighteen were accepted; one transferred to the Symposium on Heart Disease and two transferred to the Educational Classification. A certificate of merit and two "honorable mentions" were awarded to this section. Two papers were presented before the section by exhibitors. A special feature was the Symposium on Pneumonia, consisting of three exhibits accompanied by lectures and motion pictures.

The Section on Surgery, General and Abdominal, was represented by Lester R. Whitaker, Boston. There was a total of forty-three applications, of which twenty-six were accepted; one transferred to the Heart Symposium and one to the Section on Preventive and Industrial Medicine and Public Health. The section was given one certificate of merit and three "honorable mentions." Four papers were read by exhibitors on the same subjects as those carried by exhibits.

The Section on Obstetrics, Gynecology and Abdominal Surgery sent in fourteen applications, of which ten were accepted. There were two awards made to the section—a bronze medal and a certificate of merit. There were no papers presented by the exhibitors. In connection with the exhibits of this section there was conducted a motion picture program on carefully selected subjects, which drew large crowds. The section representative was H. Close Hesseltine, Chicago.

The Section on Ophthalmology had eleven applications for space, all of which were accepted and one of which was given "honorable mention." Six of the eleven exhibitors read papers in the section meetings. A motion picture program in conjunction with the exhibits was a special feature. Georgianna Dvorak-Theobald, Oak Park, was the section representative.

The Section on Laryngology, Otology and Rhinology was represented by Louis J. I. Burns, Philadelphia. There were seventeen applications presented, nine of which were accepted. One exhibitor read a paper.

The Section on Pediatrics, for which F. Thomas Mitchell, Memphis, Tenn., was the section representative, had eleven applications, of which nine were accepted. Three exhibitors read papers in the section meetings.

The Section on Pharmacology and Therapeutics presented ten applications, nine of which were accepted and one transferred to the Educational Classification. One exhibit received a silver medal. Four of the papers in the section meetings were presented by exhibitors. The section representative was Wallace M. Yater, Washington.

The Section on Pathology and Physiology was represented in the Scientific Exhibit by F. W. Konzelmann, Philadelphia. The number of applications for space totaled twenty-six, of which seventeen were accepted; three transferred to other sections and two transferred to the heart symposium. There were five awards—a gold medal, two certificates of merit and two "honorable mentions." Eight of the papers in the section meetings were from exhibitors.

The Section on Nervous and Mental Diseases presented eight applications, all of which were accepted. One exhibit received a silver medal and one special commendation. Three exhibitors read papers in the section meeting. The section representative was Peter Bassoe, Chicago.

The Section on Dermatology and Syphilology presented twelve exhibits from the fourteen applications for space. In the same group were shown two exhibits on syphilis from the educational classification. There was one "honorable mention" given. Three papers were read by exhibitors before the section. The section representative was Clark W. Finnerud, Chicago.

The Section on Preventive and Industrial Medicine and Public Health produced twenty applications, of which fourteen were accepted and one transferred. Three exhibits received "honorable mention." One exhibitor read a paper. Paul A. Davis, Akron, was section representative.

The Section on Urology, of which R. S. Ferguson, New York, was section representative, presented ten applications, with eight acceptances. One exhibit received a certificate of merit and one "honorable mention." Four papers in the section meeting were read by exhibitors. In the same group with the Section on Urology were shown two exhibits on gonorrhea from the educational classification.

The Section on Orthopedic Surgery presented eleven exhibits out of twenty applications for space. The awards consisted of a gold medal and a certificate of merit. Three exhibitors read papers in the section meeting. Three of the applications were for space to show motion pictures, which was done in an area adjoining the exhibits. Jesse T. Nicholson, Philadelphia, was the section representative.

The Section on Gastro-Enterology and Proctology had twenty-three applications for space, of which eighteen were accepted. One certificate of merit was given. Four exhibitors read papers. The section representative was J. A. Bargen, Rochester, Minn.

The Section on Radiology, with E. E. Downs, Woodbury, N. J., as section representative, presented fifteen applications,

of which fourteen were accepted. There were several other applications presented by radiologists included in other groups, notably the heart symposium. Three exhibitors presented papers before the section.

Exhibit Symposiums.—The exhibit symposium on heart disease was presented with the cooperation of the American Heart Association, with Thomas M. McMillan, Philadelphia, assisting. There were twenty-five exhibits covering different phases of the problems of heart disease, five of which received awards—a bronze medal, three certificates of merit and an "honorable mention." The exhibits were of exceedingly high caliber and aroused much favorable comment.

The exhibit symposium on pneumonia was presented under the auspices of the Section on Practice of Medicine. There were only three exhibits, but those three were well demonstrated and the booths were crowded most of the time. The motion pictures and the talks in an area adjoining the exhibits were somewhat disorganized by men not appearing to speak at the times advertised. The control of such activities by section exhibit committees is to be discouraged.

Motion Pictures.—Three sections presented motion picture programs in connection with the exhibits—Obstetrics, Ophthalmology and Orthopedic Surgery. All the pictures shown were selected with considerable care by the section representatives, the pictures being previewed and parts cut out in some instances. The program was under the control of the Director of the Scientific Exhibit. The pictures on obstetrics attracted such crowds that the program had to be discontinued from time to time to allow men to reach the adjacent meeting hall. The pictures on ophthalmology attracted fair audiences, while those on orthopedic surgery were the least successful.

Many motion pictures were shown in the individual booths. There was some difficulty with bright overhead lights, requiring the erection of screens in some places.

Motion pictures still create a serious problem. A mediocre picture will sometimes attract attention beyond its intrinsic worth, while exceptionally good pictures will block the aisles and thus interfere with surrounding exhibits.

Special Exhibits.—The Special Exhibit on Fractures was carried on under the efficient direction of Kellogg Speed, Chicago, assisted by Frank D. Dickson, Kansas City, and Walter Estell Lee, Philadelphia, with an advisory committee of fourteen and fifty-one demonstrators. The exact precision with which the demonstrations followed each other in all seven booths throughout the week bespoke of the careful planning by the committee in charge. The United States Army again assisted to the fullest extent, under difficult conditions. Surgeon General Reynolds made it possible for an officer and seven men from the Walter Reed Hospital to go to Atlantic City with a truck load of equipment. Major W. W. McCaw and the seven men were on continuous duty throughout the week. A booklet on fractures was in great demand.

A Special Exhibit on Anesthesia was put on for the first time and was not fully organized. R. M. Waters, Madison, Wis., with the aid of members of his own staff and other prominent anesthetists, conducted this exhibit. In spite of the loss in transit of part of the exhibit material and other difficulties, there was much interest in the exhibit, and the demonstrations, talks and motion pictures attracted good audiences The pamphlet accompanying the exhibit was well received.

Committee on Awards.—The Committee on Awards, composed of Ludvig Hektoen, chairman, A. J. Bedell, F. K. Boland, R. L. Haden and J. D. Trask, carefully studied all the exhibits over a period of three days and found the task of making awards extremely difficult, because of the large amount of material presented and its diversified nature.

ASSOCIATION EXHIBITS

A list "Medical Exhibits Available for Loan" was published in THE JOURNAL (Sept. 11, 1937, pp. 32B-36B) which increased markedly the number of requests for exhibits from numerous sources. There are forty exhibits on the list pertaining to the work of the various departments of the American Medical Association or to subjects in which those departments are interested. The material falls into two groups: exhibits for medical societies and other scientific organizations, and exhibits for the public for use at fairs and expositions. Requests from groups other than medical societies are required to come through the secretaries of the county societies or state associations or to receive the approval of such societies. Responsibility for installation and demonstration of the Association exhibits ordinarily is borne by the organization to which the material is lent. The American Medical Association does not have sufficient personnel to accompany all exhibits.

During the year 1937, exhibit material was sent out on 115 occasions to thirty-three states. Often two or more exhibits went to one place, resulting in 250 units distributed during the year. Of the 115 exhibits sent out, forty were medical and scientific in nature and seventy-five were for lay groups.

Attendance at Exhibits.—The attendance at fifty-four public meetings was 828,450. The attendance for all groups, including the Great Lakes Exposition and the Texas Pan-American Exposition, is estimated as about 3,500,000 persons who actually viewed the exhibits of the American Medical Association during the year.

Exhibit on Syphilis.—The Board of Trustees authorized the preparation of an exhibit on "The Treatment of Early Syphilis" in collaboration with the United States Public Health Service. The exhibit was intended primarily for medical societies. It was made in duplicate, one set being sent to Washington for distribution to medical societies in the eastern part of the country and the other set being retained in Chicago to fill requests from the Central West and West. The material has been well received by medical groups and arrangements are in progress whereby exhibits on prenatal syphilis and on late and latent syphilis will be prepared, under the auspices of the United States Public Health Service, for loan purposes under a similar arrangement.

EXPOSITION EXHIBITS

Association exhibits were shown at two expositions during the year 1937, at Dallas and at Cleveland. At Dallas the exhibit was in charge of United States Public Health Service personnel. The attendance was reported to be approximately 1,500,000. The exhibit at the Great Lakes Exposition at Cleveland consisted of eight units. Demonstrations were in charge of personnel furnished by the Cleveland Academy of Medicine. The attendance was reported to be approximately 1,000,000 persons.

MOTION PICTURES

A feature of the motion picture program during the past year was the preparation of the film "The Diagnosis and Treatment of Syphilis—A Motion Picture Clinic." This film was prepared in cooperation with the United States Public Health Service and has been in constant demand. During the last six months of the year when it was available, it was sent out from Chicago on thirty-six occasions. Requests were referred also to the United States Public Health Service at Washington, where there are several copies of the film. Several of the state health departments purchased the film for distribution in their respective states.

Other motion pictures were sent out from time to time. An appropriation has been made for the Council on Physical Therapy to make new films to replace some of those now on hand.

Summary

The Scientific Exhibit at the Atlantic City session was the largest that has been shown, with 254 exhibits. The ratio between the number of exhibits and attendance was the same as for the last several years, approximately one exhibit for each thirty-eight Fellows registered. The Council on Scientific Assembly, the secretaries of the various sections and the section representatives to the Scientific Exhibit all gave close cooperation, while the special exhibits on fractures and anesthesia were outstanding successes.

Association exhibits, dealing with the activities of the Association, were sent out on 115 occasions to thirty-three states. There were forty medical and scientific meetings and seventy-five expositions and fairs for the

public. Approximately 3,500,000 persons were reached by such means, including the Cleveland and Dallas expositions.

The demand for motion pictures has been constant. The new film on syphilis has been received with much favor.

Report of Committee to Study Contraceptive Practices and Related Problems

The following report of the Committee to Study Contraceptive Practices and Related Problems has been transmitted, through its Chairman, Dr. Carl Henry Davis, to the Board of Trustees for submission to the House of Delegates:

To the House of Delegates of the American Medical Association:

As a supplement to the reports made to you in 1936 and 1937, your committee on contraceptive practices asks your acceptance of the following statement:

It is not the function of the American Medical Association to tell physicians what therapeutic advice they shall offer patients. However, it has been its policy to investigate various procedures, devices and drugs, and to publish the results of such studies in its official publications for the information of the profession.

The instructions to the Council on Pharmacy and Chemistry and the Council on Physical Therapy to investigate further the materials, devices and procedures used for the purpose of contraception do not indicate any change in the usual policy of the Association, nor do they constitute an endorsement by the Association of contraceptive practices.

Respectfully submitted.

ARTHUR W. BOOTH, Chairman.
AUSTIN A. HAYDEN, Secretary.
CHARLES B. WRIGHT.
ROGER I. LEE.
ALLEN H. BUNCE.
RALPH A. FENTON.
JAMES R. BLOSS.
THOMAS S. CULLEN.
R. L. SENSENICH.

ADDENDA TO REPORT OF BOARD OF TRUSTEES

Report of Committee to Study Air Conditioning

At the time of the San Francisco session of the American Medical Association, the Committee to Study Air Conditioning will have functioned approximately eighteen months. From the time of its organization this committee has conceived, as its initial and chief obligation to the Association, to the medical profession and to the public, the preparation and publication of basic materials dealing with air conditioning, but foremost with respect to health and comfort. By the time of the San Francisco session this committee will have prepared and published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION or will have ready for such publication the following studies: Physical and Physiologic Principles of Air Conditioning, Part I; Physical and Physiologic Principles of Air Conditioning, Part II; Equipment for Air Conditioning; Noise and Its Effect on Human Beings; Noise Control as a By-Product of Air Conditioning; Hospital Air Conditioning; Instruments Used in the Measurement of Air Conditions. In addition, this committee has engaged in the exhaustive compilation of all pertinent publications, both historical and modern, dealing with divers aspects of air conditioning. This compilation with its abstracts, representing several thousand titles, is possibly too voluminous for ready publication but is available for scientific purposes and additional research subject to the limitations imposed by possible non-publication.

The appraisal of this committee of commercial installations of air conditioning is that, in many instances, opportunities for injury to persons subjected to artificial climates exist. Fundamentally, these objectionable features are due to faulty concepts of commercial agencies regarding the optimal conditions as to the atmosphere in which persons may be situated. The chief deviations from commendable practices are found in excessive differentials in temperature between outside air and the artificial climate produced by air conditioning, and excesses in air motion. This committee, in recognizing that the health of the public may be poorly served by the air conditions provided in many installations, also recognizes that commercial trends are toward greater consideration for the health requirements of persons influenced by artificial climates. It is expectable that from the air conditioning manufacturing industry itself will come changes in types of installations to the end that causes of the unfavorable criticism made by this committee relative to many present conditions will be eliminated.

On the completion of the publications mentioned, together with the final organization of bibliographic materials, this committee will have completed the program of work undertaken at the time of its creation. If these activities fulfil the mission intended for this committee, its discharge is requested. Otherwise it will be guided by additional instruction from the House of Delegates or other authoritative body.

Respectfully submitted.

CAREY P. MCCORD, Chairman.
EMERY R. HAYHURST.
WILLIAM F. PETERSEN.
H. B. WILLIAMS.
C. P. YAGLOU.

Report of Committee to Determine the Value of X-Ray Film with Paper Base as a Substitute for Film with Gelatin Base

At a regular meeting of the Board of Trustees held in November 1936 a Committee to Determine the Value of X-Ray Film with Paper Base as a Substitute for Film with Gelatin Base was appointed as follows: Dr. Hollis E. Potter, Chairman, Chicago; Dr. Edward H. Skinner, Kansas City, Mo.; Dr. H. Kennon Dunham, Cincinnati; Dr. J. A. Myers, Minneapolis; Dr. Homer L. Sampson, Trudeau, N. Y.

The Chairman has submitted the following as the report of the Committee.

MAJORITY REPORT

Pursuant to your request of Nov. 30, 1936, that a stipulated committee study and report on the value of paper base film as a substitute for cellulose or clear base film in x-ray studies of the chest, the undersigned beg to submit the following report. The bill for expense is small, largely through the courteous cooperation of the Powers X-ray Products Company, which furnished generous quantities of paper film and developer to each man on the committee, and the Eastman Kodak Company, which furnished the requested number of clear base films, a laboratory assay of the scale of densities in penatrometric units recorded by both types of film, and their series of opaque and clear base films made from the same chests.

THE BASIC DIFFERENCES

The essential difference between opaque base film and transparent base film lies not in the character of the emulsion and not in the quality of materials used but in the fundamental fact that the opaque base roentgenogram must be viewed by reflected light, whereas the transparent base film is viewed by transmitted light. A secondary difference is that in duplitized clear base film two intensifying screens can be used to advantage, which is not true of the single coated paper film.

By increasing the intensity of the transmitted light in viewing translucent base film many details in the areas of deepest blackening are brought to view, whereas in the opaque base film greater light intensity on a blackened area brings forth no new details to the eye.

Technically this limitation in paper base film is expressed as a "limited scale of density" record. Under ordinary illumination Wilsey has found that the scale of paper is from 1.0 to 1.7 and with translucent film from 1.0 to 2.4. With translucent base film the scale is additionally increased by increasing the intensity of the transmitted light when viewing.

The practical result of this limited density scale on the part of paper base film is that it has less latitude of exposure, it stands overexposure very poorly, and it fails to give the full scale of density contrast in the heavy individual.

CLAIMS

However, the manufacturers of paper base film do not claim its all around equality to transparent base film. They do not "push" it as a substitute for regular film, in which at least a stereo pair is considered a minimum basis for definitive study. They recommend it as a cheaper, efficient medium for use in group chest studies. They consider it quite adequate in the "sifting process" now in vogue in large groups of school children, industrial workers, college students and other social groups. They would consider it a reliable medium to spot out the infected cases, which can then be further studied by x-rays in such more exhaustive manner as desired.

Manufacturers of transparent base film point out the limited density scale of paper base film and emphasize their efforts to increase the scale of their own product to give the inexperienced technician greater latitude for exposure. They mention group surveys in which a high percentage of both opaque and clear base films have to be thrown out because of poor technical handling. They, however, would be pleased to manufacture the paper base product if it should meet with a general demand.

FINDINGS

Your Committee desires to approve of paper base film for all such chest studies as lie well within its scope of reliability and usefulness, with the following reservations:

1. We believe it is possible to miss a small percentage of minimal tuberculous lesions in the use of clear base film and that a somewhat larger percentage of minimal lesions are bound to be missed in the use of paper base film. These minimal lesions are fortunately not a high percentage of those found in any chest survey.

2. Understanding the aforementioned limitations in paper base film, we would believe its greatest field of usefulness to lie in the "group sifting" process as carried on among children in public and private schools, up to a body weight of about 150 pounds. For this purpose we believe the paper film to be infinitely better than no film at all. We cannot but be influenced by the scores of testimonial letters stating the results of group chest surveys by paper film in many cities and states. Some of these have been checked and verified by clear base film.

3. We believe that the narrower density scale of paper base film is not such as to prevent one with a good technic from doing a useful and reliable survey of the chests of thin and medium weight adults. In institutions it has been found valuable in following up known lesions. Where "extent of involvement" is the only problem, paper film may answer very well. To depict the "character of a lesion" and to gain information which will most valuably aid in determining the "type of a lesion," its "prognosis," "arrest," "tendency toward healing," and so on, no x-ray method has been devised that will approach a periodic check with stereo films of the clear base type.

We further believe that when the presence of a lesion has been demonstrated by paper film a more exhaustive study should be made on clear base film.

4. For individual or group chest study of individuals of portly character or body weight beyond 150 pounds the narrow scale of density record in opaque base film presents difficulties which increase in rapid measure as body weight and chest wall increases. The higher voltage required means lack of contrast, and scattered rays have an important role. Results are obtained which cannot be reliably depended on when speaking of the minor grades of tuberculosis or occupational disease. Not only the character but even the presence of a lesion may be indeterminate. Your Committee realizes the limited usefulness of paper film in heavy individuals and discourages its use.

5. The matter of cost: Paper is definitely cheaper. Any discussion of total costs in group surveys must include cost of exposing and processing. Costs with either opaque or clear base film can be greatly reduced by clever devices especially adapted to the problem. We find that for handling paper film more ingenious devices have been developed for group work than are ordinarily used in connection with clear base film. These devices however are not suitable for the study of individual cases or small groups.

Your Committee regrets that no simpler answer can be agreed on in this rather technical and complex problem.

Respectfully submitted.

HOLLIS E. POTTER, Chairman.
EDWARD H. SKINNER.
H. L. SAMPSON.

MINORITY REPORT
OF DR. KENNON DUNHAM

Dr. Dunham approves the report in general but wishes the paragraph numbered 1 under "Findings" to contain his impressions as to the percentage importance of missing early lesions by paper film.

He writes as follows: "If possible, I would like to have you embody one thought of which I have previously written you: I recommend that we emphasize the fact that the few(?) lesions overlooked by a paper survey are quite large in proportion.

"Let us assume that six pulmonary lesions have been found in one thousand examinations, and that paper only overlooked two. That is not two to a thousand, but two out of eight, or a fourth of the lesions. I am certain that this is not an exaggeration, because taking early known lesions as shown by films, and retaking them by paper and single films, we completely overlooked two out of ten and threw out two cases, because I thought that the paper technic might be not good enough. I am sure that the two thrown out showed much better than would generally be used.

"To repeat: Four lesions were overlooked in twelve exposures on paper, which were easily shown on films. When two of the twelve were eliminated, we had two overlooked out of ten. That is not two out of a thousand but two out of ten, or one fifth, or 20 per cent, were completely overlooked—one fifth or one fourth, not 0.002 per cent.

"Such facts should be clearly stated, otherwise advertisements of the value of paper films will be very misleading."

MINORITY REPORT
OF DR. J. A. MYERS

Dr. Myers says: "With few exceptions I feel this report is satisfactory. The exceptions are as follows:

1. In the next to the last paragraph of the section entitled "The Basic Difference," discussing "limited scale of density record," I fully appreciate the point you have made. However, in actual practice with reference to the detection of tuberculous lesions of significance, I have not found it of any importance. Therefore, I believe that part of the scale of density beyond 1.7 carries us into a field that is not significant from the standpoint of finding tuberculous lesions, such as the chest specialists are interested in finding. Anything that is detected beyond the scale of density of the paper film is too indefinite to do anything more than arouse suspicion. In other words, I do not feel this is a practical point; therefore, if the final paragraph under "The Basic Difference" were omitted, I would be in full agreement with you.

"2. In item 1 under "Findings," attention is called to the fact that we miss a small percentage of minimal lesions on both clear base and paper base film. However, it has not been my experience that a somewhat larger percentage of significant minimal lesions are missed with paper base than with clear base film. If this statement concerning the missing of minimal lesions on the paper base film could be omitted, I would have no objection to signing the report, as far as this paragraph is concerned.

"3. In items 3 and 4, body weight of the individual is considered. I do not see how we could place a limit on body weight.—For example, in this section of the country we have a great many tall but well built individuals who weigh far more than 150 pounds with whom we have no difficulty in procuring excellent chest films on both paper and clear base. On the other hand, with obese individuals, I have seen first-class technicians fail to produce satisfactory films of the chest on both paper and clear base films. If you could limit this

paragraph to obese persons rather than those of over 150 pounds, and point out that difficulty is encountered with both clear base and paper base films, I would be in favor of the statement."

Report of the Committee on Scientific Research for 1937

During the year, seventy applications received consideration and forty-seven grants were made. As heretofore, the new grants support research in various fields of medical interest. Almost without exception, the money has been turned over to the financial officer of the institution in which the grantee works, with the understanding that it would be subject to requisitions by the grantee and that an accurate account of the expenses would be kept. The final or practically final results of work under forty-three grants have been published or are in the course of publication. The results of the work under fifteen grants prior to 1937 are being prepared for publication. Under thirty-one grants prior to 1937, active work is still in progress; in several cases, reports on results have been published. Refunds amounting to $311.55 have been made during the year of unexpended balances from grants.

The committee recommends that the same appropriation be made for 1938 as for 1937; namely, $12,500 for grants in aid of medical research and $1,200 for committee expenses.

The financial statement for 1937 is presented; also brief accounts of grants pending at the end of 1936 and a list of grants made in 1937.

Respectfully submitted.

COMMITTEE ON SCIENTIFIC RESEARCH OF THE AMERICAN MEDICAL ASSOCIATION.

LUDVIG HEKTOEN, Chicago, Chairman.
Term expires, 1941.

JOHN J. MORTON, Rochester, N. Y.
Term expires, 1938.

N. W. JONES, Portland, Ore.
Term expires, 1939.

MARTIN H. FISCHER, Cincinnati.
Term expires, 1940.

C. C. BASS, New Orleans.
Term expires, 1942.

Financial Statement for 1937

Balance, Jan. 1, 1937		$ 6,688.42
Appropriation for 1937		13,750.00
Refund, grant 338		18.00
Refund, grant 361		48.23
Refund, grant 408		50.00
Refund, grant 424		193.00
Refund, grant 429		2.32
		$20,749.97

GRANTS AND EXPENSES PAID IN 1936

Grant 437, Alexander S. Wiener	$ 200.00
Grant 438, Irving Graef	300.00
Grant 439, Moore A. Mills	300.00
Grant 440, M. M. Wintrobe	200.00
Grant 441, Edward S. West and G. E. Burget	350.00
Grant 442, S. J. Crowe	480.00
Grant 443, Ernest Carroll Faust	300.00
Grant 444, George Herrmann	300.00
Grant 445, Paul M. Levin	250.00
Grant 446, Samuel Soskin	500.00
Grant 447, R. C. Herrin	400.00
Grant 448, Warren H. Cole	500.00
Grant 449, Charles W. Turner	250.00
Grant 450, Harry Sobotka and Louis J. Soffer	250.00
Grant 451, CoTui	200.00
Grant 452, G. Albin Matson	100.00
Grant 453, L. T. Samuels and C. H. Thienes	300.00
Grant 454, George M. Curtis	600.00
Grant 455, Elizabeth S. Russell	225.00
Grant 456, Ira A. Manville	500.00
Grant 457, James B. Hamilton	450.00
Grant 458, Orthello R. Langworthy	350.00
Grant 459, John S. Lawrence	450.00
Grant 460, M. G. Seelig	250.00
Grant 461, Roe E. Remington	400.00
Grant 462, Lay Martin	200.00
Grant 463, Jay Conger Davis	600.00
Grant 464, Frank W. Allen	200.00
Grant 465, Fred L. Humoller	300.00
Grant 466, G. Louis Weller Jr.	275.00
Grant 467, B. O. Barnes	300.00
Grant 468, Valy Menkin	300.00
Grant 469, Joseph Krafka Jr.	370.00
Grant 470, Peter Heinbecker	350.00
Grant 471, Timothy Leary	500.00
Grant 472, Margaret Lasker	200.00
Grant 473, Roy H. Turner	400.00
Grant 474, Marion Fay	275.00
Grant 475, Joseph T. King	375.00
Grant 476, D. B. Phemister and Keith Grimson	400.00
Grant 477, Irving J. Wolman	335.00
Grant 478, Martin Silberberg	600.00
Grant 479, Tracy J. Putnam	200.00
Grant 480, Amy L. Daniels	250.00
Grant 481, Warren O. Nelson	200.00
Grant 482, Warren O. Nelson	400.00
Grant 483, J. M. Johlin	250.00
Clerical Expense	600.00
Committee Expense	282.40
Printing Supplies	21.38
	$16,588.78
Balance on hand	$ 4,161.19

GRANTS OF COMMITTEE ON SCIENTIFIC RESEARCH

NEW GRANTS—1937

Grant 437: Alexander S. Wiener, Jewish Hospital of Brooklyn, $200, agglutinogens in human blood.

Grant 438: Irving Graef, New York University, $300, pulmonary reactions to lipids and mineral oils.

Grant 439: Moore A. Mills, Northwestern University Medical School, $300, experimental pulmonary tuberculosis in the dog.

Grant 440: M. M. Wintrobe, Johns Hopkins University, $200, red corpuscles.

Grant 441: Edward S. West and G. E. Burget, University of Oregon Medical School, $350, diuretic action and chemical metabolism of sorbitol.

Grant 442: S. J. Crowe, Johns Hopkins University, $480, physiology of hearing.

Grant 443: Ernest Carroll Faust, Tulane University, $300, epidemiology of trichinosis in New Orleans.

Grant 444: George Herrmann, University of Texas, Galveston, $300, chemistry of the heart muscle.

Grant 445: Paul M. Levin, Johns Hopkins University, $250, cerebral efferent tracts in primates.

Grant 446: Samuel Soskin, Michael Reese Hospital, Chicago, $500, hormone assay of blood and urine in endocrine dysfunction.

Grant 447: R. C. Herrin, University of Wisconsin, $400, urea clearance.

Grant 448: Warren H. Cole, University of Illinois College of Medicine, $500, cholesterol tolerance as an index of hyperthyroidism and study of excretory function of the liver.

Grant 449: Charles W. Turner, University of Missouri, $250, pituitary hormones.

Grant 450: Harry Sobotka and Louis J. Soffer, Mount Sinai Hospital, New York, $250, lactic acid tolerance in hepatic disease.

Grant 451: CoTui, New York University, $200, Shwartzman phenomenon and pyrogenic reaction.

Grant 452: G. Albin Matson, Montana State University, Missoula, $100, antigenic properties of certain chemical substances.

Grant 453: L. T. Samuels and C. H. Thienes, University of Southern California, $300, hypophysis in metabolism of carbohydrate fat and metabolism.

Grant 454: George M. Curtis, Ohio State University, $600, iodine and calcium balance in thyroid disease.

Grant 455: Elizabeth S. Russell, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Me., $225, genetics of tumors in the fruit fly.

Grant 456: Ira A. Manville, University of Oregon Medical School, $500, relation of degenerative changes in connective tissue to glycuronic metabolism.

Grant 457: James B. Hamilton, Albany Medical College, $450, testicular descent by administration of male hormone.

Grant 458: Orthello R. Langworthy, Johns Hopkins University, $350, effect of ovulation and pregnancy on smooth muscle of urinary bladder.

Grant 459: John S. Lawrence, Strong Memorial Hospital, Rochester, N. Y., $450, antiserum for white blood cells.

Grant 460: M. G. Seelig, Barnard Free Skin and Cancer Hospital, St. Louis, $250, carcinogenicity of heterocyclic hydrocarbons.

Grant 461: Roe E. Remington, Medical College of the State of South Carolina, $400, quantitative effect of iodine deficiency in the rat.

Grant 462: Lay Martin, Johns Hopkins University, $200, gastric juice.

Grant 463: Jay Conger Davis, Minneapolis, $600, action of certain drugs on the coronary arteries.

Grant 464: Frank W. Allen, University of California, $200, relation of nucleotide fraction of red corpuscles to glycolysis.

Grant 465: Fred L. Humoller, Loyola University School of Medicine, Chicago, $300, toxic principles in culture fluids of Bacterium enteritidis.

Grant 466: G. Louis Weller Jr., George Washington University, $275, effect of sodium pyruvate and other substances on vitamin B deficiency.

Grant 467: B. O. Barnes, Rush Medical College, $300, extract of adrenals.

Grant 468: Valy Menkin, Harvard Medical School, $300, mechanism of inflammation.

Grant 469: Joseph Krafka Jr., University of Georgia School of Medicine, $370, elastometric measurements on smooth muscle and connective tissue.

Grant 470: Peter Heinbecker, Washington University School of Medicine, $350, pituitary regulation of water exchange and effect of diet on dextrose tolerance and insulin response in dogs.

Grant 471: Timothy Leary, Office of Medical Examiner, Boston, $500, early atherosclerotic processes and relation of cholesterol to neoplastic growth.

Grant 472: Margaret Lasker, Yonkers, N. Y., $200, incidence of pentosuria and fructosuria.

Grant 473: Roy H. Turner, Tulane University, $400, physiology of blood vessels in man.

Grant 474: Marion Fay, Woman's Medical College of Pennsylvania, $275, biochemistry of strontium.

Grant 475: Joseph T. King, University of Minnesota, $375, physiology of sulfanilamide.

Grant 476: D. B. Phemister and Keith Grimson, University of Chicago, $400, effect of sympathectomy in dogs.

Grant 477: Irving J. Wolman, University of Pennsylvania, $335, lipoid pneumonia.

Grant 478: Martin Silberberg, Washington University School of Medicine, $600, influence of hormones on bone growth.

Grant 479: Tracy J. Putnam, Boston City Hospital, $200, injuries to the cervical cord.

Grant 480: Amy L. Daniels, State University of Iowa, $250, relation of fluorine to physiologic function.

Grant 481: Warren O. Nelson, Wayne University College of Medicine, Detroit, $200, synthetic androgenic substances.

Grant 482: Warren O. Nelson, Wayne University College of Medicine, Detroit, $400, effect of thymus gland on the growth of rats.

Grant 483: J. M. Johlin, Vanderbilt University School of Medicine, $250, attenuation of toxins by interfacial adsorption.

STATE OF WORK UNDER PREVIOUS GRANTS

1. Completed During the Year

Grant 179, 1930: George T. Pack, Memorial Hospital, New York, $300, certain clinicopathologic problems of melanoma. See grant 231, 1932. Adair, F. E.: Treatment of Melanoma, *Surg., Gynec. & Obst.* **62:** 406, 1936. See chapter on Skin in the Treatment of Cancer and Allied Diseases by George T. Pack and Edward M. Livingston, to be published by Paul B. Hoeber, Inc., New York.

Grant 231, 1932: George T. Pack, Memorial Hospital, New York, $500, complete analysis of 300 cases of melanoma (refund, $65.76). See grant 179, 1930.

Grant 297, 1933: Erma A. Smith, Iowa State College, $150, effect on the rat of sublethal amounts of illuminating gas. Smith, Erma; McMillan, E., and Mack, Lillian: Factors Influencing the Lethal Action of Illuminating Gas, *J. Indust. Hyg.* **17:** 18, 1935. Williams, I. R., and Smith, Erma: Blood Picture, Reproduction, and General Condition During Daily Exposure to Illuminating Gas, *Am. J. Physiol.* **110:** 611, 1935. Smith, Erma, and Kim, C. W.: The Blood Sugar During Asphyxia by Illuminating Gas, *Proc. Am. Physiol. Soc.* **49:** 149, 1937.

Grant 317, 1934: M. D. Overholser, University of Missouri, $300, experimental growths in genital tract of monkeys and relation of anterior hypophysis to diabetes. Nelson, W. O., and Overholser, Milton D.: Effect of Oestrin Injections upon Experimental Pancreatic Diabetes in the Monkey, *Proc. Soc. Exper. Biol. & Med.* **32:** 150, 1934. Overholser, M. D., and Nelson, W. O.: Migration of Nuclei in Uterine Epithelium of Monkey Following Prolonged Estrin Injections, *Proc. Soc. Exper. Biol. & Med.* **34:** 839, 1936. Nelson, W. O., and Overholser, M. D.: The Effect of Estrogenic Hormone on Experimental Pancreatic Diabetes in the Monkey, *Endocrinology* **20:** 473, 1936. Nelson, W. O., and Overholser, M. D.: The Control of Diabetes in Depancreatized Animals by the Injection of Oestrin, *Proc. Missouri Acad. Sc.* **1:** 138, 1934-1935.

Grant 338, 1934; W. W. Brandes, Baylor University, $150, the effect of acidosis on antibodies and resistance to infection (refund, $18). Brandes, W. W., and Cairns, A. B.: The Effect of Experimental Acidosis on the Production of Immune Bodies in the Rabbit, *J. Immunol.* **32:** 137, 1937.

Grant 345, 1934: Emile Holman, Stanford University School of Medicine, $400, study by Frederick Fender of prolonged stimulation of the nervous system. See grant 377, 1935. Fender, Frederick A.: Epileptiform Convulsions from "Remote" Excitation, *Arch. Neurol. & Psychiat.* **37:** 259, 1937.

Grant 346, 1934: William Antopol, Mount Sinai Hospital, New York, $250, relationship of acetylcholine to cabohydrate metabolism. Tuchman, Lester; Schifrin, Arthur, and Antopol, William: Blood Amylase Response to Acetyl-Beta-Methylcholine Chloride in Pancreatomized Dogs, *Proc. Soc. Exper. Biol. & Med.* **33:** 142, 1935. Schifrin, Arthur; Tuchman, Lester, and Antopol, William: Blood Amylase Response to Acetyl-Beta-Methylcholine Chloride in Rabbits, *ibid* **34:** 539, 1936. Antopol William; Tuchman, Lester, and Schifrin, Arthur: Choline-Esterase Activity of Human Sera, with Special Reference to Hyperthyroidism, *ibid.* **36:** 46, 1937.

Grant 353, 1935: Frank R. Menne, University of Oregon Medical School, $500, metabolism of cholesterol in rabbits (refund, $10.78). Menne, Frank R.; Beeman, Joseph A. P., and Labby, Daniel H.: Cholesterol-Induced Arteriosclerosis in Rabbits, with Variations Due to Altered Status of Thyroid, *Arch. Path.* **24:** 612, 1937.

Grant 360, 1935: A. M. Wright, J. J. Mulholland and F. W. CoTui, New York University, $300, physiology of sympathectomized dogs (refund, $1.30). CoTui; Burnstein, Charles L., and Wright, Arthur M.: The Effect of Sympathectomy on the Sensitivity to Adrenalin of the Bronchioles, *J. Pharmacol. & Exper. Therap.* **58:** 33, 1936. McCloskey, K. Leora; CoTui, Frank W.; Mulholland, John, and Wright, Arthur M.: Adrenalin Necrosis After Sympathectomy, *J. Lab. & Clin. Med.* **22:** 377, 1937.

Grant 362, 1935: Lloyd H. Ziegler and Arthur Knudson, Albany Medical College, $100, activity after recovery from rickets. See grant 393, 1936. Ziegler, Lloyd H., and Knudson, Arthur: Qualitative Analysis of Activity after Recovery from Rickets, *J. Comp. Psychol.* **24:** 119, 1937.

Grant 363, 1935: Rachel E. Hoffstadt, University of Washington, $100, protein and carbohydrate fractions of Staphylococcus aureus. Hoffstadt, Rachel E., and Clark, Wesley, M.: The Chemical Composition and Antigenic Properties of Fractions of the Smooth and Rough Strains of Staphylococcus Aureus, *J. Infect. Dis.*, to be published.

Grant 366, 1935: G. E. Burget, University of Oregon Medical School, $500, physiology of cardiac portion of stomach. Burget, G. E., and Zeller, W. E.: A Study of the Cardia in Unanesthetized Dogs, *Proc. Soc. Exper. Biol. & Med.* **34:** 433, 1936. Zeller, Werner, and Burget, G. E.: A Study of the Cardia, *Am. J. Digest. Dis. & Nutrition* **4:** 113, 1937.

Grant 368, 1935: Felix Saunders, University of Chicago, $250, growth factors for bacteria. See grant 399, 1936. Saunders, Felix; Finkle, I. I.; Sternfeld, Leon, and Koser, Stewart A.: Some Chemical Properties of an Essential Growth Factor for Pathogenic Bacteria, *J. Am. Chem. Soc.* **59:** 170, 1937. Koser, Stewart A.; Finkle, R. D.; Dorfman, A., and Saunders, Felix: Studies on Bacterial Nutrition: The Possible Role of Inorganic Salts and of Alterations in the Culture Medium in Providing Growth-Promoting Effects, *J. Infect. Dis.*, to be published. Koser, Stewart A.; Finkle, R. D.; Dorfman, A.; Gordon, Mary V., and Saunders, Felix: Studies on Bacterial Nutrition: A Comparative Study of the Growth-Promoting Properties of Various Substances, *ibid.*, to be published. Saunders, Felix, and others: Some Chemical Properties of a Growth Factor for Pathogenic Bacteria, *J. Am. Chem. Soc.*, in course of publication. Saunders, Felix, and others: Precipitation Studies on Growth Factors for Pathogenic Bacteria, *ibid.*, in course of publication. Saunders, Felix, and others: Solubility Studies on Growth Factors for Pathogenic Bacteria, *ibid.*, in course of publication.

Grant 369, 1935: Harold Jeghers, Boston University School of Medicine, $150, vitamin A deficiency in certain diseases. Jeghers, Harold: Night Blindness Due to Vitamin A Deficiency: A Consideration of Its Importance in Traffic Problems, *New England J. Med.* **216:** 51,1937. Jeghers, Harold: Night Blindness as a Criterion of Vitamin A Deficiency: Review of the Literature with Preliminary Observations of the Degree and Prevalence of Vitamin A Deficiency among Adults in Both Health and Disease, *Ann. Int. Med.* **10:** 1304, 1937.

Grant 377, 1935: Frederick A. Fender, Stanford University School of Medicine, $600, prolonged stimulation of parts of the nervous system. See grant 345, 1934.

Grant 381, 1935: John R. Murlin, University of Rochester Medical School, $600, testis hormone. See grant 414, 1936. Kochakian, C. D., and Murlin, J. R.: The Relationship of the Synthetic Male Hormone, Androstendion, to the Protein and Energy Metabolism of Castrate Dogs, and the Protein Metabolism of a Normal Dog, Am. J. Physiol. **117:** 642, 1936. Kochakian, Charles D.: Excretion of Male Hormones, *Endocrinology* **21:** 60, 1937. Kochakian, Charles D.: Testosterone and Testosterone Acetate and the Protein and Energy Metabolism of Castrate Dogs, *ibid.*, p. 750.

Grant 385, 1935: Erwin Brand and G. F. Cahill, New York State Psychiatric Institute and Hospital, $200, cystinuria (refund, 66 cents). Brand, Erwin; Block, R. J., and Cahill, G. F.: Cystinuria; Metabolism of Hydroxy Analogue of Methionine, *J. Biol. Chem.* **119:** 681, 1937. Brand, Erwin; Block, R. J., and Cahill, G. F.: Cystinuria; Metabolism of S-Methylcysteine, of γ-Thiobutyric Acid, and of γ, γ-Dithiodibutyric Acid, *ibid.*, p. 689. Brand, Erwin; Block, R. J.; Kassell, B., and Cahill, G. F.: Cystinuria; Metabolism of Casein and Lactalbumin, *ibid.*, p. 689.

Grant 387, 1935: George D. Snell, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine, $500, hereditary changes in germ cells from x-rays (refund, $20). Snell, George D.: A Study of the Hereditary Changes Produced in the Germ Cells of Female Mice by X-Rays, and the Abnormalities of Development Resulting Therefrom, *J. Exper. Zool.*, in course of publication.

Grant 389, 1935: Tracy J. Putnam, Boston City Hospital, Boston, $150, mechanism of cortical atrophy in dementia paralytica. Merritt, H. Houston; Putnam, Tracy J., and Campbell, A. C. P.: Pathogenesis of

the Cortical Atrophy Observed in Dementia Paralytica, *Arch. Neurol. & Psychiat.* **37:** 75, 1937.

Grant 390, 1935: Abraham White, Yale University, $100, chemistry and metabolism of the sulfur of proteins (refund, $8.25). See grant 429, 1936. White, A., and Fishman, J. B.: The Formation of Taurine by the Decarboxylation of Cysteic Acid, *J. Biol. Chem.* **116:** 457, 1936. See grant 429, 1936. Stern, Kurt G., and White, Abraham: Studies on the Constitution of Insulin: I. Properties of Reduced Insulin Preparations, *ibid.* **117:** 95, 1937. White, Abraham, and Stern, Kurt G.: Studies on the Constitution of Insulin: II. Further Experiments on Reduced Insulin Preparations, *J. Biol. Chem.* **119:** 215, 1937.

Grant 393: Lloyd H. Ziegler and Arthur Knudson, Albany Medical College, $165, effect of rickets on activity of rats. See grant, 362, 1935.

Grant 396: Valy Menkin, Harvard Medical School, $600, iron metabolism and effect of ferric chloride on tuberculosis. See grant 468, 1937. Lorenz, Egon, and Menkin, Valy: Experimental Siderosis: III. Spectroscopic Studies on Iron-Containing Pigment, *Arch. Path.* **22:** 82, 1936. Menkin, Valy: A Summary of Studies on the Effect of Ferric Chloride on Tuberculous Rabbits, *Proc. Soc. Exper. Biol. & Med.* **34:** 262, 1936. Menkin, Valy, and Warner, Charlotte R.: Significance of Carbohydrate Metabolism and Local Acidosis in Inflammation, *ibid.*, p. 594. Menkin, Valy: Studies on Inflammation: XII. Mechanism of Increased Capillary Permeability; a Critique of the Histamine Hypothesis, *J. Exper. Med.* **64:** 485, 1936. Menkin, Valy, and Warner, Charlotte R.: Studies on Inflammation: XIII. Carbohydrate Metabolism, Local Acidosis, and the Cytological Picture in Inflammation, *Am. J. Path.* **13:** 25, 1937. Menkin, Valy: Tolerance Tests with Ferric Chloride on Advanced Tuberculosis Patients, *Am. Rev. Tuberc.* **35:** 134, 1937. Menkin, Valy: Isolation and Properties of the Factor Responsible for Increased Capillary Permeability in Inflammation, *Proc. Soc. Exper. Biol. & Med.* **36:** 164, 1937. Menkin, Valy: Mechanism of Inflammation, *Arch. Path.* **24:** 65, 1937.

Grant 399, 1936: Felix Saunders, University of Chicago, $250, essential growth factor for bacteria. See grant 368, 1935.

Grant 400, 1936: John Field, Stanford University, $200, effect of dinitrophenol on the lens. Field, J., II; Tainter, E. G.; Martin, A. W., and Belding, H. S.: Studies on the Oxygen Consumption of the Rabbit Lens and the Effect of 2-4 Dinitrophenol Thereon, *Am. J. Ophth.* **20:** 779, 1937.

Grant 403, 1936: Samuel Soskin, Michael Reese Hospital, Chicago, $750, laboratory tests for endocrine dysfunctions. See grant 446, 1937. Freed, S. C.; Garvin, T., and Soskin, Samuel: Participation of Ovarian Factors Other than "Estrin" in the Estrus Phenomenon, *Proc. Soc. Exper. Biol. & Med.* **35:** 409, 1936. Freed, S. C., and Soskin, Samuel: On the Evaluation of the Potency of Estrogenic Substances, *Endocrinology* **20:** 863, 1936. Freed, S. C., and Soskin, Samuel: Complete and Incomplete Estrogenic Hormones, Arising from Different Sites in the Rat's Ovary, *ibid.*, **21:** 599, 1937. Freed, S. C., and Hechter, O.: The Extraction of Both the Gonadotropic and (Free or Total) Estrogenic Hormones from a Single Urine Sample, *ibid.*, **20:** 396, 1936.

Grant 404, 1936: Peter Heinbecker, Washington University, St. Louis, $750, mechanism of altered sensitivity of smooth musculature to epinephrine. See grant 470, 1937. Heinbecker, Peter: Studies on the Sensitivity of Smooth Musculature to Exogenous Epinephrine, *Am. J. Physiol.* **120:** 401, 1937. Heinbecker, Peter, and Bishop, George H.: Mechanism of Spastic Vascular Disease and Its Treatment, *Ann. Surg.*, to be published.

Grant 405, 1936: M. M. Wintrobe, Johns Hopkins University, $200, vertebrate red corpuscles. See grant 440, 1937. Wintrobe, M. M.: Studies of Blood Formation in the Fetus and New-Born; III. The Relation of Antianemic Principle Assay of Fetal Liver and Placental Extracts in Cases of Pernicious Anemia and in Mosquito Larvae, *Am. J. M. Sc.* **193:** 449, 1937.

Grant 406, 1936: Helen C. Coombs, New York Homeopathic Medical College, $200, action of acetylcholine on the central nervous system (refund, 66 cents). Coombs, Helen C., and Cope, Otis M.: Arrest of Experimental Convulsions by Acetylcholine in the Cat, *Proc. Soc. Exper. Biol. & Med.* **34:** 483, 1936.

Grant 408: Gustav J. Martin, Trudeau Sanatorium, Trudeau, N. Y., $200, lipoids of tubercle bacilli (refund, $50). Martin, Gustav, J., and Steenken, William, Jr.: Chemical Studies of the Dissociants of the H-37 Human Tubercle Bacillus, *J. Bact.*, to be published.

Grant 409, 1936: Lester R. Dragstedt and G. M. Dack, University of Chicago, $600, relation of B. necrophorum to chronic ulcerative colitis in man. Dack, G. M.; Dragstedt, Lester R., and Heinz, Theodore E.: Further Studies on Bacterium Necrophorum Isolated from Cases of Chronic Ulcerative Colitis, *J. Infect. Dis.* **60:** 335, 1937.

Grant 411: Fae D. Wood, University of California at Los Angeles, $125, distribution of Trypanosoma cruzi in southwestern United States. World, Fae D., and Wood, Sherwin F.: Distribution of Trypanosoma Cruzi in Southwestern United States, *Am. J. Trop. Med.*, to be published.

Grant 414, 1936: John R. Murlin, University of Rochester School of Medicine and Dentistry, $600, testis hormone. See grant 381.

Grant 417, 1936: Isaac Schour, University of Illinois College of Dentistry, $400, parathyroids in calcium metabolism. Schour, Isaac; Chandler, S. B., and Tweedy, W. R.: Changes in the Teeth Following Parathyroidectomy: I. The Effects of Different Periods of Survival, Fasting, and Repeated Pregnancies and Lactations on the Incisor of the Rat, *Am. J. Path.* **13:** 945, 1937. Schour, Isaac; Tweedy, W. R.; Chandler, S. B., and Engel, M. B.: Changes in the Teeth Following Parathyroidectomy: II. The Effect of Parathyroid Extract and Calciferol on the Incisor of the Rat, *ibid.*, p. 971.

Grant 419, 1936: Carl A. Dragstedt, Northwestern University Medical School, $250, role of histamine and of adrenal cortex extract in anaphylaxis in the dog. Dragstedt, Carl A.; Mills, Moore A., and Mead, Franklin B.: Adrenal Cortex Extract in Canine Anaphylactic Shock, *J. Pharmacol. & Exper. Therap.* **59:** 359, 1937.

Grant 421, 1936: W. R. Tweedy, Loyola University, Chicago, $150, action of parathyroid extract. Tweedy, Wilbur R., and McNamara, Edward W.: Effect of Administration of Parathyroid Extract on Serum Calcium Level in the Nephrectomized Rat, *Proc. Soc. Exper. Biol. & Med.* **35:** 414, 1936. McJunkin, F. A.; Tweedy, W. R., and McNamara, E. W.: Effect of Parathyroid Extract and Calciferol on the Tissues of the Nephrectomized Rat, *Am. J. Path.* **13:** 325, 1937.

Grant 422, 1936: T. Grier Miller, Hospital of University of Pennsylvania, $300, chemical composition of human succus entericus and absorption of dextrose from small intestine. Abbott, Karr and Miller: Factors Concerned in the Absorption of Glucose from the Jejunum and Ileum, *Am. J. Digest. Dis. & Nutrition*, to be published. Abbott and Johnston: A Nonsurgical Method of Treating, Localizing and Diagnosing the Nature of Obstructive Lesions of the Small Intestine, *Surg., Gynec. & Obst.*, to be published.

Grant 424, 1936: Charles P. Sheldon, Albany Medical College, $200, respiration in pregnancy and labor (refund, $193). Sheldon, Charles P.: Obstetrical Analgesia and Anesthesia: An Experimental Study, in course of publication.

Grant 425, 1936: William J. Turner, State Tuberculosis Sanatorium, Cresson, Pa., $50, uroporphyrins. Turner, William J.: Studies on Porphyria: Observations on the Fox-Squirrel, Sciurus Niger, *J. Biol. Chem.* **118:** 519, 1937.

Grant 426: H. P. Smith, State University of Iowa, $500, blood clotting. Smith, H. P.; Warner, E. D., and Brinkhous, K. M.: Prothrombin Deficiency and the Bleeding Tendency in Liver Injury (Chloroform Intoxication), *J. Exper. Med.* **66:** 801, 1937.

Grant 429, 1936: Abraham White, Yale University, $100, sulfur of protein (refund, $2.32). See grant 390, 1935.

Grant 432, 1936: Roe E. Remington, Medical College of the State of South Carolina, $200, quantitative effect of iodine deficiency in the rat. See grant 461, 1937. Remington, Roe E.: Improved Growth in Rats on Iodine Deficient Diets, *J. Nutrition* **13:** 223, 1937. Remington, Roe E.; Remington, John W., and Welch, Sarah S.: The Thyroid Gland of the Normal Rat: Size, Dry Matter and Iodine Content, *Anat. Rec.* **67:** 367, 1937.

Grant 437, 1937: Alexander S. Wiener, Jewish Hospital of Brooklyn, $200, agglutinogens in human blood. Landsteiner, Karl, and Wiener, Alexander S.: On the Presence of M Agglutinogens in the Blood of Monkeys, *J. Immunol.* **33:** 19, 1937. Herman, Morris, and Derby, Irving M.: The Blood Groups and M-N Types in Mental Diseases, *ibid.* **33:** 87, 1937.

Grant 450, 1937: Harry Sobotka and Louis J. Soffer, Michael Reese Hospital, Chicago, $250, lactic acid tolerance in hepatic disease. Soffer, Louis J.; Dantes, D. Alfred, and Sobotka, Harry: Sodium-*d*-Lactate Blood Clearance as a Test of Liver Function, *Proc. Soc. Exper. Biol. & Med.* **36:** 692, 1937. Soffer, Louis J.; Dantes, D. Alfred, and Sobotka, Harry: Metabolism of Sodium-*d*-Lactate: Utilization of Intravenously Injected Na-*d*-Lactate by Normal Individuals, *Arch. Int. Med.*, to be published. Soffer, Louis J.; Dantes, D. Alfred, and Sobotka, Harry: Metabolism of Sodium-*d*-Lactate: Utilization of Intravenously Injected Na-*d*-Lactate by Patients with Acute Diffuse Parenchymal Disease of the Liver, *ibid.*, to be published.

2. Incomplete

A. Work under the grant completed, account rendered of expenses but results not published fully:

Grant 174, 1930: Alfred R. Roos, College of Medical Evangelists, Loma Linda, Calif., $1,455, hay fever pollens in the Southwest.

Grant 286, 1933: F. H. Pike, Columbia University, $600, the effects of successive experimental lesions of the nervous system.

Grant 308, 1933: John L. Ulrich, Johns Hopkins University, $250, the reflex system in the cat. See grant 372, 1935.

Grant 309, 1933: Carroll L. Birch, University of Illinois School of Medicine, $300, assay of urine for sex hormone of the anterior pituitary.

Grant 356, 1935: Jay C. Davis, University of Minnesota, $500, coronary flow and lesions of the aortic valves. See grant 463, 1937.

Grant 365, 1935: Ludwig A. Emge, Stanford University School of Medicine, $500, effect of castration on malignant tumors.

Grant 367, 1935: Robert Gault and A. C. Ivy, American Institute for the Deaf-Blind, Evanston, Ill., $600, mechanical stimulation of the vibrotactile organs. See grant 412, 1936.

Grant 372, 1935: John L. Ulrich, Johns Hopkins University, $450, cerebral functions in the action of antagonistic muscles. See grant 308, 1933.

Grant 378, 1935: Wallace M. Yater, Georgetown University Hospital, Washington, D. C., histopathologic basis of "bundle branch" block.

Grant 382, 1935: L. Goodman, A. J. Geiger and L. Claiborn, Yale University, $250, antianemic principle. See grant 340, 1934.

Grant 412, 1936: Robert H. Gault and A. C. Ivy, American Institute for Deaf-Blind, Evanston, Ill., $400, stimulation of vibrotactile organs by mechanical vibrations. See grant 367, 1935.

Grant 418, 1936: Frank W. Allen, University of California, $200, nucleotide of the red corpuscles. See grant 464, 1937.

Grant 428, 1936: D. B. Phemister, K. Grimson and H. Wilson, University of Chicago, $400, effect of sympathectomy on blood pressure in dogs. See grant 476, 1937.

Grant 430, 1936: S. W. Ranson, Northwestern University Medical School, $315, fever producing agents.

Grant 431, 1936: Benjamin Harrow, College of the City of New York, $200, purification of the hyperglycemic factor in urine.

B. Active Work Still in Progress

Grant 254, 1932: J. Lisle Williams, Rush Medical College, Chicago, $200, decreased dextrose tolerance in acute infectious diseases.

Grant 277, 1933: Gustav Zechel, University of Illinois College of Medicine, $260, study of growing malignant cells by moving photomicrographs. Zechel, Gustav, and Morgenster, O.: A Timing Device for Talking Motion Pictures, *Science* **81:** 23, 1935.

Grant 310, 1934: Lay Martin, Johns Hopkins University, $150, study of gastric juice. See grant 462, 1937.

Grant 324, 1934: William deB. MacNider, University of North Carolina, $285, study of artificial circulation in the kidney.

Grant 337, 1934: James L. O'Leary, Washington University, $245, Loven reflexes.

Grant 343, 1934: John Guttman, Post-Graduate Medical School and Hospital, $400, relation between electrical disturbances in cochlea and the sensation of hearing. Guttman, John, and Barrera, S. E.: The Electrical Potentials of the Cochlea and Auditory Nerve in Relation to Hearing, *Am. J. Physiol.* **120:** 666, 1937.

Grant 344, 1934: Paul L. Day and W. C. Langston, University of Arkansas School of Medicine, $300, effect of withdrawal of vitamin G from diet of monkeys.

Grant 348, 1935: Phillips Thygeson, State University of Iowa, $400, trachoma and "inclusion virus" disease of the genito-urinary tract. Thygeson, Phillips, and Mengert, W. F.: The Virus of Inclusion Conjunctivitis, *Arch. Ophth.* **15:** 377, 1936.

Grant 350, 1935: Frederic A. Gibbs, Harvard University School of Medicine, $100, fiber system in the cat's brain concerned in convulsions. Gibbs, Erna Leonhardt, and Gibbs, Frederic Andrews: A Purring Center in the Cat's Brain, *J. Comp. Neurol.* **64:** 209, 1936.

Grant 355, 1935: Royall M. Calder, San Antonio, Texas, $150, mechanism of pneumococcic inflammation.

Grant 370, 1935: Richard L. Crouch, University of Missouri, $500, connections of diencephalon.

Grant 379, 1935: Victor C. Myers (Donald E. Bowman), Western Reserve Medical School, $650, chemical test for pregnancy.

Grant 380, 1935: N. W. Popoff, Highland Hospital, Rochester, N. Y., $600, arteriovenous anastomosis.

Grant 386, 1935: E. V. McCollum, Johns Hopkins University, $150, adaptation of the eyes to subdued light and its relation to vitamin A (refund, $19.65).

Grant 388, 1935: Tracy J. Putnam, Boston City Hospital, Boston, $150, effect of low voltage current on nervous system.

Grant 397, 1936: R. F. Hanzal, Western Reserve University, $150, source of endogenous uric acid and the effects of methylated xanthines on its secretion.

Grant 398, 1936: George A. Emerson, West Virginia University, Morgantown, $175, metabolic products of sympathomimetic amines.

Grant 401, 1936: W. T. Dawson, University of Texas, Galveston, $200, toxicity of cardiac glucosides.

Grant 402, 1936: C. H. Thienes and L. T. Samuels, University of Southern California, $500, carbohydrate metabolism as influenced by the hypophysis.

Grant 407, 1936: Ralph I. Dorfman, Louisiana State University, $250, estrogenic substance in human urine and other estrogenic compounds.

Grant 410, 1936: H. E. Eggers, University of Nebraska, $200, effect of tetra-methyl-arsonium gluconate on human cancer.

Grant 413, 1936: Philip Levine, Newark Beth Israel Hospital, Newark, N. J., $350, bacteriophage action in the dysentery group. Levine, Philip, and Perlstein, David: Phage-Specific Heat-Labile Factors in B. Dysenteriae Sonne, *Proc. Soc. Exper. Biol. & Med.* **36:** 295, 1937.

Grant 415, 1936: Gordon H. Scott, Washington University, St. Louis, $300, lead and aluminum in cerebrospinal fluid.

Grant 416, 1936: Jean Broadhurst, Teachers College, Columbia University, $200, inclusion bodies in the female genital area.

Grant 420, 1936: Arthur Knudson, Albany Medical College, $400, synthesis of cholesterol in the animal body.

Grant 423, 1936: Alfred Gilman, Yale University, $300, physiology of the antidiuretic hormone of the posterior pituitary. Gilman, Alfred, and Goodman, Louis: The Secretory Response of the Posterior Pituitary to the Need for Water Conservation, *J. Physiol.* **90:** 113, 1937.

Grant 427, 1936: Helen S. Mitchell, Massachusetts State College, $300, nutritional cataract in rats.

Grant 433, 1936: Frederick Lemere, Eastern State Hospital, Medical Lake, Wash., $500, Berger brain rhythms in psychotic patients.

Grant 434, 1936: Wilbert H. McGaw, Western Reserve University, $500, sound conduction in fractured bones.

Grant 435, 1936: Warren O. Nelson, Wayne University College of Medicine, Detroit, $300, effect of synthetic androgenic substances. See grant 481, 1937. Nelson, Warren O., and Merckel, Charles G.: Effects of Androgenic Substances in the Female Rat, *Proc. Soc. Exper. Biol. & Med.* **36:** 823, 1937. Nelson, Warren O., and Merckel, Charles G.: Maintenance of Spermatogenesis in Testis of the Hypophysectomized Rat with Sterol Derivatives, *ibid.*, p. 825. Nelson, Warren O., and Hickman, Jane: Effect of Oestrone on Hypophyses and Reproductive Organs of Thyroidectomized Rats, *ibid.*, p. 828.

Grant 436, 1936: Albert P. Krueger, University of California, $300, nature of bacteriophage. Krueger, A. P., and Mundell, J. H.: Effect of Phage on Electrokinetic Potential of Susceptible Cells, *Proc. Soc. Exper. Biol. & Med.* **36:** 317, 1937. Krueger, A. P.: The Mechanism of Bacteriophage Production, *Science* **86:** 379, 1937. Scribner, E. J., and Krueger, A. P.: The Effect of NaCl on the Phage-Bacterium Reaction, *J. Physiol.* **21:** 1, 1937. Krueger, Albert P., and Fong, Jacob: The Relationship Between Bacterial Growth and Phage Production, *ibid.*, p. 137.

3. DISCONTINUED (NO RESULTS PUBLISHED)

Grant 361, 1935: P. L. Heitmeyer, University of Oregon Medical School, $100, experimental uterine ovarian implants (refund, $48.23).

Report of Committee on Therapeutic Research

The Committee on Therapeutic Research, a standing committee of the Council on Pharmacy and Chemistry, encourages scientific investigations in the field of therapeutics by providing funds for the prosecution of necessary research.

During the year 1937 the Committee issued thirty-one new grants. A detailed list of these grants, together with a list of publications during 1937, and of unexpired grants made before Jan. 1, 1937, will be found in the appendix to this report.

The following is a list of the investigations conducted with the assistance of grants made by the Committee on Therapeutic Research, reports of which were published during 1937:

1. A Capillary, Nonpenetrating Microquinhydrone Electrode, J. A. Pierce: *J. Biol. Chem.* **117:** 651 (Feb.) 1937.

2. Does Digitalis Protect Against Diphtheria Toxin, C. W. Edmunds and R. G. Smith: *J. Pharmacol. & Exper. Therap.* **61:** 37 (Sept.) 1937.

3. The Effect of Barbital Derivatives on the Electrocardiogram, Roberta Hafkesbring and Winona MacCalmont: *Am. J. Physiol.* **119:** 322 (June) 1937.

4. The Effect of Ephedrine on Absorption from the Small Intestine, Edward J. Van Liere, David Northup and Clark K. Sleeth: *J. Pharmacol. & Exper. Therap.* **60:** 434 (Aug.) 1937.

5. Determination of Iodine in Ten Cc. of Blood by Burning in Platinum Combustion Tube with Screw Feed, and Distillation, J. F. McClendon, A. C. Bratton and R. V. White: Proc. Soc. Biol. Chem., *J. Biol. Chem.* **119:** lxvii (June) 1937.

6. Excitant Action of Morphine on the Long-Surviving Decorticated Cat, W. E. Hambourger: *Proc. Soc. Exper. Biol. & Med.* **36:** 36 (Feb.) 1937.

7. Clinical Excretion of Bismuth: II. The Urinary Excretion of Bismuth After Clinical Intramuscular Injections of Sodium Iodobismuthite (Sodium Bismuth Iodide, Iodobismitol) and Sodium Bismuth Thioglycollate (Thiobismol), Torald Sollmann, H. N. Cole and Katharine Henderson: *Am. J. Syph., Gonor. & Ven. Dis.* **21:** 480 (Sept.) 1937.

8. Clinical Excretion of Bismuth: III. Fecal and Total Excretion, Torald Sollmann, H. N. Cole and Katharine Henderson: *Am. J. Syph., Gonor & Ven. Dis.* **21:** 492 (Sept.) 1937.

9. Clinical Excretion of Bismuth: IV. The Late Excretion of Bismuth After Cessation of Treatment, Torald Sollmann, H. N. Cole and Katharine Henderson: *Am. J. Syph., Gonor. & Ven. Dis.* **21:** 506 (Sept.) 1937.

10. Tolerance Tests with Ferric Chloride on Advanced Tuberculosis Patients, Valy Menkin: *Am. Rev. Tuberc.* **35:** 134 (Jan.) 1937.

11. Studies on Inflammation: XIII. Carbohydrate Metabolism, Local Acidosis, and the Cytological Picture in Inflammation, Valy Menkin and Charlotte R. Warner: *Am. J. Path.* **13:** 25 (Jan.) 1937.

12. Mechanism of Inflammation, Valy Menkin: *Arch. Path.* **24:** 65 (July) 1937.

13. Isolation and Properties of the Factor Responsible for Increased Capillary Permeability in Inflammation, Valy Menkin: *Proc. Soc. Exper. Biol. & Med.* **36:** 164 (March) 1937.

14. Studies of Blood Formation in the Fetus and New-Born. IV. M. M. Wintrobe and (by invitation) Dean A. Clarke, William Trager and Lewis Danziger: *J. Clin. Investigation* **16:** 667 (July) 1937.

15. The Effect of Immune Blood on the Opsonocytophagic Power of the Blood in Pertussis, William L. Bradford, Robert Mikell and Betty Slavin: *J. Clin. Investigation* **16:** 829 (Sept.) 1937.

16. Absorption of Insulin from Thiry-Vella Loops of the Intestine in Normal and Depancreatized Dogs, John R. Murlin, Ruth Latta Tomboulian and H. B. Pierce: *Am. J. Physiol.* **120:** 733 (Dec.) 1937.

17. The Effect of Hexylresorcinol on the Absorption of Insulin from the Gastro-Intestinal Tract of Dogs, R. G. Daggs, W. R. Murlin and J. R. Murlin: *Am. J. Physiol.* **120:** 744 (Dec.) 1937.

18. The Effect of Estrin on the Basal Metabolism Rate and the Nervous Symptoms of Ovariectomized Women, Mary E. Collett, Joseph T. Smith and Grace E. Wertenberger: *Am. J. Obst. & Gynec.* **34:** 639 (Oct.) 1937.

19. Studies in the Metabolism of Alkalinized Dextrose, John C. Krantz Jr., Ruth Musser, C. Jelleff Carr, Frances Beck and T. Nelson Carey: *Arch. internat. de pharmacodyn. et de thérap.* **55:** 9 (Jan. 31) 1937.

20. The Effect of Decholin Sodium on the Intact Intestine of the Non-anesthetized Dog, Charles M. Gruber: *J. Pharmacol. & Exper. Therap.* **59:** 301 (March) 1937.

21. The Effect of Histamine on Salivary Secretion, O. S. Gibbs and H. H. McClanahan: *J. Pharmacol. & Exper. Therap.* **61:** 218 (Nov.) 1937.

22. Studies of the Principle in Liver Effective in Pernicious Anemia: IV. The Therapeutic Activity of Its Multiple Factors, Bernard M. Jacobson and Y. Subbarow: *J. Clin. Investigation* **16:** 573 (July) 1937.

23. Blood Substitutes, William A. Amberson: *Biol. Rev.* **12:** 48, 1937.

24. Further Studies on Intoxication with Vitamin D, I. E. Steck, H. Deutsch, C. I. Reed and H. C. Struck: *Ann. Int. Med.* **10:** 951 (Jan.) 1937.

25. Grenz Rays in Dermatology, Cleveland White: *Arch. Phys. Therapy* **18:** 139 (March) 1937.

26. The Influence of Cold on the Calorigenic Action of Dinitrophenol, V. E. Hall, J. M. Crismon and P. E. Chamberlin: *J. Pharmacol. & Exper. Therap.* **59:** 193 (Feb.) 1937.

27. Studies on the Sex Difference in Rats in Tolerance to Certain Barbiturates and to Nicotine, Harald G. O. Holck, Munir A. Kanân, Lucille M. Mills and Edwin L. Smith: *J. Pharmacol. & Exper. Therap.* **60:** 323 (July) 1937.

28. Studies on the Sex Difference in Rats in Tolerance to Certain Barbiturates and to Nicotine, Harald G. O. Holck, Munir A. Kanân, Lucille M. Mills and Edwin L. Smith: *Skandinav. Arch. f. Physiol.* **77,** 1937.

29. Chronic Acetanilid Poisoning in the Albino Rat: An Experimental Study of Addiction and Tolerance, E. J. Stanton and W. R. Agricola: *J. Pharmacol. & Exper. Therap.* **59:** 437 (April) 1937.

30. Insulin Treatment of Morphine Abstinence Symptoms: An Experimental Evaluation, E. J. Stanton: *J. Pharmacol. & Exper. Therap.* **60:** 387 (Aug.) 1937.

31. The Chemotropic Attraction of Leukocytes by Tractions of Streptococcus Haemolyticus, H. M. Dixon, M. McCutcheon and E. J. Czarnetzky: *Am. J. Path.* **13:** 645 (July) 1937.

32. Chemotropism in Leukocytes: The Source of the Attractive Substance, M. McCutcheon and H. M. Dixon: *Arch. Path.* **23:** 743 (May) 1937.

33. The Serum Carotene in Diabetic Patients, George H. Stueck, Gerald Flaum and Elaine P. Ralli: *J. A. M. A.* **109:** 343 (July 31) 1937.

34. Experimental Radium Poisoning: II. Changes in the Teeth of Rabbits Produced by Oral Administration of Radium Sulfate, Maurice Rosenthal: *Am. J. M. Sc.* **193:** 495 (April) 1937.

35. A Cinematic Study of Bronchiolar Reactions, Torald Sollmann and A. J. Gilbert: *Proc. Soc. Exper. Biol. & Med.* **36:** 16 (Feb.) 1937.

36. Microscopic Observations of Bronchiolar Reactions, Torald Sollmann and A. J. Gilbert: *J. Pharmacol. & Exper. Therap.* **61:** 272 (Nov.) 1937.

During 1937 the following grants were made:

Grant 306: Edwards A. Park, professor of pediatrics, Johns Hopkins University School of Medicine, $75, to investigate rickets in the rat and the effect of parathyroid extract on the circulation of the bone.

Grant 307: Ephraim Shorr, assistant professor of Medicine, Cornell University Medical College, $200, to investigate methods of determining adequate dosage of corpus luteum hormone for the human being.

Grant 308: Claus W. Jungeblut, professor of bacteriology, Columbia University College of Physicians and Surgeons, $250, to investigate the relation of vitamin C to diphtheria.

Grant 309: Katharine Henderson, Department of Pharmacology, Western Reserve University School of Medicine, $250, to investigate bismuth absorption on oral administration.

Grant 310: Valy Menkin, Department of Pathology, Harvard Medical School, $150, to investigate the relation of iron salts in the treatment of tuberculosis.

Grant 311: Clarence P. Berg, assistant professor of biochemistry, State University of Iowa, $250, to investigate amino acids.

Grant 312: W. F. Hamilton, professor of physiology and pharmacology, University of Georgia School of Medicine, $125, to investigate the effect of anesthesia on vasomotor responses.

Grant 313: Treat B. Johnson, Sterling professor of chemistry, Yale University, $250, to investigate pyrimidines.

Grant 314: F. C. Koch, chairman Department of Physiological Chemistry and Pharmacology, University of Chicago, $250, to investigate provitamin D.

Grant 315: Erwin E. Nelson, professor of pharmacology, Tulane University School of Medicine, $125, to investigate some actions of the pituitary.

Grant 316: Edward Van Liere, professor of physiology, West Virginia University School of Medicine, $100, to investigate the action of various drugs on gastric motility.

Grant 317: Arnold De M. Welch, Department of Pharmacology, Washington University School of Medicine, $250, to investigate the action of choline, etc., on the metabolism of fat.

Grant 318: Abraham White, Department of Physiological Chemistry, Yale University School of Medicine, $200, to investigate the lactogenic substance isolated in the pituitary.

Grant 319: J. P. Quigley, Department of Physiology, Western Reserve University School of Medicine, $250, to investigate gastro-intestinal motility.

Grant 320: M. L. Tainter, professor of pharmacology, Stanford University School of Medicine, $250, to investigate sympathomimetic amines.

Grant 321: Helen Tucker, Department of Chemistry, Skidmore College, $125, to investigate the experimental production of fatty livers by dietary means.

Grant 322: George H. Paff, Department of Anatomy, Long Island College of Medicine, $70, to investigate an assay method for digitalis.

Grant 323: Torald Sollmann, dean and professor of pharmacology and materia medica, Western Reserve University School of Medicine, and Joseph Seifter, Western Reserve University School of Medicine, $250, to investigate bismuth compounds.

Grant 324: Howard B. Lewis, professor of biological chemistry, University of Michigan Medical School, $200, to investigate selenium salts.

Grant 325: Walter E. Hambourger, assistant professor of pharmacology, Western Reserve University School of Medicine, $150, to investigate the mechanism of morphine action with special reference to the excitement in cats.

Grant 326: R. Beutner, professor of pharmacology, Hahnemann Medical College, $80, to investigate the toxicity of procaine.

Grant 327: Eben J. Carey, dean and professor of anatomy, Marquette University School of Medicine, $250, to investigate the pharmacologic agents that influence the histologic signs of nervous action.

Grant 328: Donald E. Gregg, assistant professor of physiology, Western Reserve University School of Medicine, $250, to investigate the cardiac blood supply in dogs.

Grant 329: Roberta Hafkesbring, associate professor of physiology, Woman's Medical College of Pennsylvania, $250, to investigate the effects of sodium barbital, sodium amytal and pentobarbital sodium on blood pressure, respiration and kidney function.

Grant 330: John B. Lagen, research associate in medicine, University of California Medical School, $150, to investigate the potassium and sodium ions in the blood of patients suffering from asthma and other allergic conditions and changes following treatment.

Grant 331: John B. Lagen, research associate in medicine, University of California Medical School, $100, to investigate the total base content of the blood in the anxiety states.

Grant 332: J. P. Simonds, Department of Pathology, Northwestern University Medical School, $200, to investigate the selective activity of toxic substances on the kidneys.

Grant 333: Owen S. Gibbs, chief of Pharmacological Division, University of Tennessee College of Medicine, $180, to investigate the toxicity of morphine and scopolamine on rats.

Grant 334: J. F. McClendon, professor of physiologic chemistry, University of Minnesota Medical School, $200, to investigate iodine determination in blood.

Grant 335: E. M. K. Geiling, professor of pharmacology, University of Chicago, Paul R. Cannon, professor of pathology, University of Chicago, and C. M. Marberg, Department of Pathology, University of Chicago, $250, to investigate the fate and mechanism of action of diethylene glycol.

Grant 336: E. M. K. Geiling, professor of pharmacology, University of Chicago, Paul R. Cannon, professor of pathology, University of Chicago, J. M. Coon and A. Rodaniche, Department of Pharmacology, University of Chicago, $250, to investigate the fate of sulfanilamide after (1) injury to the liver and kidneys by diethylene glycol; (2) the injection of the elixir of sulfanilamide (Massengill).

The following grants were issued before Jan. 1, 1937. In some cases the grant has expired and an unexpended balance remains, or the work is not yet completed or not yet published.

Grant 102: C. W. Greene, professor of physiology and pharmacology, University of Missouri, $250, to investigate the distribution of nitrous oxide and oxygen in the blood during anesthesia.

Grant 119: Nicholas Kopeloff, research associate in bacteriology, New York State Psychiatric Institute and Hospital, $100, to investigate bacillus acidophilus milk for the prevention and treatment of summer diarrhea in babies.

Grant 152: C. W. Greene, professor of physiology and pharmacology, University of Missouri, $300, to investigate the reaction of the coronary system to drugs.

Grant 164: E. L. Jackson, associate professor of pharmacology, Emory University School of Medicine, $200, to investigate the antagonism between soluble barbital and insulin.

Grant 200: Walter Bauer, Massachusetts General Hospital, Robert W. Lovett Memorial Foundation of the Harvard Medical School, $250, to investigate the anatomy and physiology of normal joints with special reference to rheumatoid arthritis.

Grant 201: George R. Cowgill, associate professor of physiologic chemistry, Sterling Hall of Medicine, Yale University, $250, to investigate vitamin B in relation to morphine addiction.

Grant 214: E. A. Park, professor of pediatrics, and J. A. Pierce, Johns Hopkins University School of Medicine, $200, to investigate the reaction of cartilage.

Grant 221: John G. Reinhold, Department of Public Health, Philadelphia General Hospital, $250, to investigate the action of aminoacetic acid (glycine) in progressive muscular dystrophy.

Grant 222: Eugene U. Still, assistant professor of physiology, University of Chicago, $250, to investigate the changes in the metabolism of the pancreas.

Grant 223: Clinton H. Thienes, professor of pharmacology, and Lawrence E. Detrick, Department of Pharmacology, University of Southern California School of Medicine, $200, to investigate withdrawal phenomena in morphine addicted animals.

Grant 228: Henry G. Barbour, associate professor of pharmacology and Toxicology, Yale University School of Medicine, $250, to investigate metabolism and water exchange in morphine habituation.

Grant 232: George R. Cowgill, associate professor of physiologic chemistry, Yale University School of Medicine, $250, to investigate the heart in vitamin B deficiency.

Grant 236: C. W. Greene, professor of physiology and pharmacology, University of Missouri School of Medicine, $100, to investigate the pharmacology of the so-called specific coronary dilator drugs.

Grant 238: Roy R. Kracke, professor of pathology, Emory University School of Medicine, $250, to investigate the effect of the oxidation products of aminopyrine and related drugs on the leukocyte counts of rabbits.

Grant 248: Fred C. Koch, chairman of the Department of Physiological Chemistry and Pharmacology, University of Chicago, $250, to investigate the testis hormone.

Grant 249: J. Percy Baumberger, associate professor of physiology, Department of Physiology, Stanford University, $200, to investigate the occurrence and oxidation-reduction potential of pigments in tumor cells.

Grant 251: Bernard Fantus, professor of therapeutics, University of Illinois College of Medicine, $100, to investigate the titration of the antitoxic value of serum of patients who have received tetanus antitoxin.

Grant 257: O. W. Barlow, formerly assistant professor of pharmacology, Western Reserve University School of Medicine, $150, to investigate analeptics vs. barbiturates.

Grant 259: O. W. Barlow, formerly assistant professor of pharmacology, Western Reserve University School of Medicine, $100, to investigate the effects of parasympathetic drugs on intestine.

Grant 261: Robert P. Walton, professor of pharmacology, University of Mississippi School of Medicine, $100, to investigate the absorption of drugs through oral mucosa.

Grant 263: H. A. Shoemaker, associate professor of biochemistry and pharmacology, C. E. Clymer, professor of clinical surgery, and Henry H. Turner, University of Oklahoma School of Medicine, $150, to investigate the blood cholesterol and iodine values in thyroid disease and their alteration by treatment.

Grant 264: Detlev W. Bronk, Johnson professor of biophysics, University of Pennsylvania School of Medicine, $200, to investigate the action of various drugs on the autonomic centers.

Grant 268: Walter E. Hambourger, assistant professor of pharmacology, Western Reserve University School of Medicine, $250, to investigate the mechanism of morphine action wth special reference to the excitement in cats.

Grant 269: Francis G. Blake, Sterling professor of medicine, and Marion E. Howard, Sterling Professor of medicine, Yale University School of Medicine, $50, to investigate the use of artificial pneumothorax in the treatment of lobar pneumonia.

Grant 270: Elaine P. Ralli, assistant professor of medicine, New York University College of Medicine, $250, to investigate the effect of carotene on the blood vitamin A.

Grant 273: Marston T. Bogert, professor of chemistry, Columbia University, $100, to investigate the chemistry and pharmacology of the quinazoline group.

Grant 276: Eugene Stanton, Department of Pharmacology, Western Reserve University School of Medicine, $150, to investigate the addiction, tolerance and abstinence to various narcotics in animals, especially rats.

Grant 278: William H. Lewis Jr., assistant clinical professor of medicine, and Arthur C. DeGraff, professor of therapeutics, New York University College of Medicine, $150, to investigate the function of the heart in relation to age.

Grant 279: Norman A. David, assistant professor of pharmacology, University of Cincinnati College of Medicine, $65, to investigate the effects of carbarsone and other pentavalent arsenicals on the optic nerve.

Grant 280: John P. Peters, professor of medicine, Yale University School of Medicine, $200, to investigate by means of intravenous pyelography the state of ureters and kidneys in a large series of patients after delivery and subsidence of acute signs of toxemia.

Grant 281: O. W. Barlow, formerly assistant professor of pharmacology, Western Reserve University School of Medicine, $125, to investigate circulatory effects of metrazol under conditions of anesthesia with ether as well as under the influence of hypnotics.

Grant 282: Arthur W. Grace, Department of Medicine, Cornell University Medical College, $250, to investigate the effect of x-ray and Frei vaccine therapy in artificially inoculated venereal lymphogranuloma in guinea pigs.

Grant 283: Louis N. Katz, director of cardiovascular research, Nelson Morris Memorial Institute for Medical Research, Michael Reese Hospital, Chicago, $200, to investigate the action of drugs on coronary circulation.

Grant 285: Morton McCutcheon, associate professor of pathology, University of Pennsylvania School of Medicine, $150, to investigate the chemotropism of leukocytes.

Grant 287: M. L. Tainter, professor of pharmacology, Stanford University School of Medicine, $250, to investigate sympathomimetic amines.

Grant 288: Louis Goodman, Department of Pharmacology and Toxicology, Yale University School of Medicine, $150, to investigate the effects of histidine injections on gastric physiology.

Grant 289: Carl C. Pfeiffer, Department of Pharmacology, University of Chicago, $225, to investigate the possible amino acids present in the Trypanosoma lewisi antibody.

Grant 295: Torald Sollmann, dean and professor of pharmacology and materia medica, Western Reserve University School of Medicine, and Albert Gilbert, Western Reserve University School of Medicine, $150, to investigate the microscopic reactions of the bronchioles to drugs and anaphylaxis.

Grant 297: Melvin Dresbach, Harvard University Medical School, $250, to investigate the emetic effect of some of the digitalis bodies.

Grant 298: Kenneth W. Thompson, Department of Physiology, Yale University School of Medicine, $200, to investigate the effects of the thyroid stimulating hormone.

Grant 302: Mary E. Collett, Flora Stone Mather College, Western Reserve University, $200, to investigate the effect of the ovarian hormone on the hot flashes and the basal metabolism of ovariectomized women.

Grant 303: Arnold De M. Welch, Department of Pharmacology, Washington University School of Medicine, $200, to investigate the action of choline and betaine in the metabolism of fat.

Grant 304. Howard B. Lewis, professor of biological chemistry, University of Michigan Medical School, $175, to investigate selenium salts.

Grant 305: Beverly Douglas, assistant dean and associate professor of surgery, Vanderbilt University School of Medicine, $250, to investigate the pneumatic (transparent rubber jacket) system of treating extensive wounds.

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the Year Ending December 31, 1937

Reserve Invested as at December 31, 1936	$2,253,521.31	
Bonds Purchased (Cost)	98,218.75	
	$2,351,740.06	
Less Bonds Called	11,367.06	
Invested Funds December 31, 1937		$2,340,373.00
Balance for Investment December 31, 1936	$ 6,870.75	
Interest on Investments	84,223.46	
	91,094.21	
Less:		
Transfer to General Fund	52,032.65	
Uninvested Funds December 31, 1937		39,061.56
Invested and Uninvested Reserve as at December 31, 1937		$2,379,434.56

DAVIS MEMORIAL FUND

Balance in Fund December 31, 1936	$7,013.18	
1937 Interest on Bank Balance	105.57	
Total Fund as at December 31, 1937, on Deposit		$ 7,118.75

HERMAN L. KRETSCHMER, Treasurer.

AUDITOR'S REPORT

February 2, 1938.

To the Board of Trustees,
American Medical Association, Chicago, Illinois.

Dear Sirs:

In accordance with your instructions, we have made an examination of the Balance Sheet of the American Medical Association, Chicago, Illinois, as at December 31, 1937, and of the Income Account for the year 1937. In connection therewith, we examined or tested accounting records of the Association and other supporting evidence, and obtained information and explanations from officers and employees of the Association; we also made a general review of the accounting methods and of the operating and income accounts for the year, but we did not make a detailed audit of the transactions. We now submit our report on the examination, together with related statements as enumerated in the index appended hereto.

In our opinion, based on such examination, the accompanying Balance Sheet and related Income Account fairly present the position of the Association as at December 31, 1937, and the results of its operations for the year, subject to the following qualifications and observations:

(1) The inventories of materials, supplies and work in progress, amounting to $92,151.50, are stated in accordance with certificates sworn to by responsible officials of the Association, and have not been confirmed by us in any way.

(2) In accordance with the established practice of the Association, the accounts as stated do not include (a) unrecorded assets in respect of accrued interest on bond investments, and membership dues unpaid; and (b) provision for accrued payroll, accrued property taxes for the year 1937, and sundry unpaid bills.

(3) Subscriptions paid in advance are stated at an estimated amount which is based on cash received in December 1937 on account of 1938 subscriptions. This procedure conforms to the method used in prior years.

(4) Advance payments on publications include an estimated amount ($127,118.58) for prepaid subscriptions to Hygeia, and the amount ($25,580.50) received in advance for January 1938 advertising, postage and directory sales and service.

(5) The buildings of the Association are carried at reproduction values as determined by an appraisal by Holabird and Root as at December 31, 1936, less depreciation accrued to the date of the Balance Sheet. The portion of the depreciation provision for the year applicable to the increase in book value, which was recorded at December 31, 1936, as determined by the appraisal, has been charged against the complementary credit included in the Net Worth of the Association in that connection.

We have received a letter from Messrs. Loesch, Scofield, Loesch and Burke, attorneys for the Association, stating that there were two lawsuits pending against the Association at December 31, 1937, both alleging libel; one filed by Dr. Jean Paul Fernel for $1,000,000, and the other filed by Harold F. Wadlow for $150,000. The attorneys state that in their opinion both suits will be defeated. We have also received a certificate from an official of the Association stating that at December 31, 1937, there were no contingent liabilities except the lawsuits here referred to.

Fidelity insurance is carried against the undermentioned officers and employees of the Association in the amounts stated:

Dr. Olin West, Secretary and General Manager	$10,000.00
Dr. Herman L. Kretschmer, Treasurer	10,000.00
E. A. Hoffman, Cashier	10,000.00
J. E. Hartigan, Assistant Cashier	2,000.00
Sundry Employees (eleven, $1,000.00 each)	11,000.00
Total Fidelity Insurance	$43,000.00

We have pleasure in reporting that the books are well maintained and that every facility was afforded us for the proper conduct of the examination.

Yours truly, PEAT, MARWICK, MITCHELL & Co.

INDEX TO STATEMENTS

	Exhibit
Balance Sheet, as at December 31, 1937	"A"
Income Account, for the year ended December 31, 1937	"B"
	Schedule
Journal Operating Expenses, for the year ended December 31, 1937	"1"
Association and Miscellaneous Expenses, for the year ended December 31, 1937	"2"

EXHIBIT "A"

BALANCE SHEET AS AT DECEMBER 31, 1937

ASSETS:		
Property and Equipment:		
Real Estate—Land at less than cost (see note); and Buildings at Reproduction Cost New (as appraised by Holabird and Root at December 31, 1936), less Depreciation		$1,167,503.26
Equipment—at Cost, less Depreciation:		
Machinery	$ 133,444.60	
Type and Metal	15,222.14	
Furniture and Equipment	90,443.85	
Chemical Laboratory	8,584.58	247,695.17
Total Property and Equipment		1,415,198.43
Investments—at Cost:		
U. S. Government Securities	1,453,316.81	
Railroad, Municipal and Utility Bonds	887,056.19	2,340,373.00
Cash held by Treasurer for Investment		39,061.56
Cash in Bank and on Hand		159,921.56
Accounts Receivable:		
Advertising	58,516.19	
Co-operative Medical Advertising Bureau	13,822.61	
Reprints	3,843.01	
Miscellaneous	5,397.77	81,579.58
Notes Receivable		500.00
Inventories of Materials, Supplies and Work in Progress		92,151.50
Expenditures on Publications in Progress		92,842.11
Prepaid Expenses—Insurance, etc		9,807.89
Total		$4,231,435.63

Note.—Book value of Land was reduced $40,000.00 as of December 31, 1933, by official action of Board of Trustees. This action was reported to House of Delegates.

LIABILITIES:		
Accounts Payable:		
Co-operative Medical Advertising Bureau		$ 13,447.86
Miscellaneous		258.15
		13,706.01
Subscriptions Paid in Advance		158,607.47
Advance Payments on Publications		152,699.08
Net Worth:		
Association Reserve Fund	$ 350,000.00	
Building Reserve Fund	300,000.00	
Capital Account:		
Amount thereof as at December 31, 1936	$3,062,810.60	
Net Income for the year ended December 31, 1937	122,242.92	
	3,185,053.52	
Deduct — Amount transferred to Building Reserve Fund, during year	50,000.00	3,135,053.52
Increase in book value of Buildings—per appraisal	124,481.59	
Deduct — Depreciation applicable thereto for year ended December 31, 1937	3,112.04	121,369.55
Net Worth, December 31, 1937		3,906,423.07
Total		$4,231,435.63

EXHIBIT "B"

INCOME ACCOUNT

FOR THE YEAR ENDED DECEMBER 31, 1937

Journal:		
Gross Earnings:		
Fellowship Dues and Subscriptions		$ 670,170.31
Advertising		841,042.57
Jobbing		108,546.08
Reprints		3,587.29
Books		14,700.22
Insignia		6,514.71
Miscellaneous Sales		9,642.56
Gross Earnings from Journal		1,654,203.74
Operating Expenses—Schedule "1"		982,830.10
Net Earnings from Journal		671,373.64
Miscellaneous Income:		
Rents	$ 1,200.00	
Sundry Publications	8,889.16	10,089.16
Association Income:		
Income from Investments	83,563.74	
Miscellaneous Income	7,453.20	91,016.94
Gross Income		772,479.74
Association Expenses—Schedule "2"	431,635.63	
Miscellaneous Expenses—Schedule "2"	218,601.19	650,236.82
Net Income		$ 122,242.92

SCHEDULE "1"

JOURNAL OPERATING EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1937

Wages and Salaries		$460,182.01
Editorials, News and Reporting		10,850.30
Paper—Journal Stock		239,081.25
Paper—Miscellaneous		2,582.60
Electrotype and Engravings		16,165.38
Binding		417.06
Ink		9,385.05
Postage—First Class		35,530.13
Postage—Second Class		61,744.76
Journal Commissions		15,886.25
Collection Commissions		773.27
Discounts		27,840.20
Express and Cartage		5,607.74
Exchange		2,924.55
Office Supplies		4,359.86
Telephone and Telegraph		4,612.93
Office Jobbing		16,352.79
Power and Light		11,599.00
Factory Supplies		14,455.94
Repairs and Renewals—Machinery		7,413.33
Miscellaneous Operating Expenses		21,671.18
Bad Debt Losses, and loss from Sale of Equipment (net)		809.75
Total Journal Operating Expenses, before Provision for Depreciation		970,245.33
Depreciation on Equipment (computed on diminishing balances):		
Machinery	$7,023.40	
Furniture and Equipment	4,334.16	
Factory Equipment	426.05	
Type	339.93	
Metal	461.23	12,584.77
Total Journal Operating Expenses		$982,830.10

SCHEDULE "2"

ASSOCIATION AND MISCELLANEOUS EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1937

Association Expenses:	
Association	$115,437.69
Health and Public Instruction	36,266.71
Pharmacy and Chemistry	47,555.08
Chemical Laboratory	27,784.22
Medical Education and Hospitals	73,625.17
Therapeutic Research	4,859.44
Legal Medicine and Legislation	37,456.25
Bureau of Investigation	16,568.30
Bureau of Medical Economics	28,929.82
Council on Foods	19,350.30
Physical Therapy	16,020.82
Bureau of Association Exhibits	6,962.95
Net Loss from sale of securities	367.06
Laboratory Depreciation (5% on diminishing balances)	451.82
Total Association Expenses	$431.635.63
Miscellaneous Expenses:	
Insurance and Taxes	$ 21,785.62
Legal and Investigation	23,288.60
Building Expenses	37,806.64
Building Depreciation (2.5% on diminishing balances—cost basis)	19,419.48
Fuel	8,759.84
Sundry Publications	107,541.01
Total Miscellaneous Expenses	$218,601.19

REPORT OF THE JUDICIAL COUNCIL

To the Members of the House of Delegates of the American Medical Association:

During the past year but two disciplinary actions of county societies have been brought before the Judicial Council on appeal. These are fewer cases than have been appealed in former years and seem to indicate that more particular attention to procedure has been paid than previously. Reversal of state society actions was not required in either case. The correspondence has steadily increased in volume and in the number of new situations which apparently are not plainly covered in the Principles of Medical Ethics. More questions are arising involving the relations of doctors with hospitals, hospital service plans, insurance companies and governmental agencies.

DISCIPLINE BY RESOLUTIONS

The attempt is being made in some societies to regulate some undesirable situations by amendment of the by-laws, by the adoption of resolutions or by the establishment of rules of conduct directed to the specific undesirable practice existing at the moment. In such instances small regard is paid to the established constitution and by-laws and short cuts to disciplinary action are sought, usually by making loss of membership automatic on violation of the newly adopted by-law, resolution or rule of conduct. In previous reports the Judicial Council has called attention to the undesirability of basing disciplinary action on such specific rules or resolutions and especially when the general broad principles of conduct set out in the Principles of Medical Ethics are adequate to cover the situation.

Because loss of membership in a component county society causes loss of membership in the state society and in the American Medical Association as well, it would seem advisable to have the causes of loss of membership uniform and the same in all county societies, at least in those of each constituent state association. If there were such uniformity, in all probability the justness of loss of membership and Fellowship in the American Medical Association because of loss of membership in a component society never would arise. Such a question never yet has arisen but may arise if disciplinary measures are taken on the basis simply of the violation of a resolution or a rule of conduct. For example, it is not too great a stretch of the imagination to suppose that a component society having internal disturbances might at a highly emotional time adopt a Rule of Conduct declaring that practicing in a certain hospital automatically removes a physician from membership in the society. Such a rule obviously would be adopted for some definite purpose. The purpose might be to embarrass or punish a certain physician or a group of physicians or to bring pressure on the hospital. The physician or physicians or the hospital might be entirely ethical and might not violate any of the regularly adopted by-laws. A serious objection to disciplining under Rules of Conduct is that these regulations generally are adopted in a much less formal manner than by-laws. Ordinarily they are adopted on the spur of the moment, a majority of those present and voting being required. While such a hypothetic case as presented has not come before the Judicial Council as yet, the extension of the practice of using these regulatory procedures as a basis for disciplining will almost inevitably at some time in the future require the Judicial Council to decide whether a member of the American Medical Association can be deprived of Fellowship and the privileges of membership for nothing more heinous than a local unfortunate situation.

STUDY OF CONSTITUTIONS AND BY-LAWS

In view of the rapidly changing conditions of medical practice, as shown by many letters of inquiry coming to the Council, a careful study of the constitutions and by-laws of both constituent state medical associations and component county medical societies might be advisable to determine whether these instruments have kept pace with the changes involving medical practice which have occurred already or are in the process of occurring. Strictly speaking, the activities of a society or any organization are defined by and restricted to those purposes, and the necessary activities to accomplish the purposes, stated in the constitution or the articles of incorporation establishing the organization. The constitutions of most medical societies name as the purpose of the organization the promotion of the science and art of medicine, the protection of the public health, the education of the profession and the uniting with similar organizations to form the American Medical Association. In no constitution, so far as the Judicial Council is aware, is there provision to enter the field of the practice of medicine as an organization either by the actual furnishing of care by the organization or by the control of the methods or the procedure of its members in furnishing care. The House of Delegates has recommended that experiments be made by component societies in methods of caring for low income groups, and many such experiments have been made and are now in operation but apparently without authority in the constitutions and apparently without control by the respective societies except through the Principles of Medical Ethics which might be applicable in individual cases. Local county societies and state associations should have direction of and control over such activities, but such control and direction cannot be maintained against opposition unless such activities are included among the purposes for which the societies are organized and operating. The Judicial Council recommends that all state associations carefully review their present constitutions and by-laws with the object in view of such revision as may be necessary to meet present day needs of medical practice and medical organizations.

An interesting departure from the customary method of providing for the disciplining of members by county societies has recently come to the attention of the Council. A state association in revising its constitution and by-laws laid down the rules of procedure for disciplining members in excellent detail and established these rules as those to be followed by all component societies under its jurisdiction. By so doing the component societies are obligated to act under and to proceed according to the by-laws of the state association and have neither the need nor the authority to adopt provisions of their own. The by-laws of the component society thus require only the statement that procedures for the disciplining of members are as stated in the by-laws of the state association. It would appear that this plan of having identical rules of procedure in all component societies of a state established by the state association would obviate some of the appeals which come before the Judicial Council on appeal alleging procedural error.

RENTAL OF RADIUM

A widespread practice of renting radium for the treatment of patients by physicians not owning or being experienced in the use of radium has caused considerable discussion during the past year. Ordinarily instructions in the technic of the use of the radium are sent by the person furnishing it. Sometimes the radium is furnished by a commercial concern, sometimes by a physician owning it. The advisability of the use of such a powerful agency by those not trained in its use and the ethics involved of prescribing and directing its use by a person who has not examined or seen the person on whom it is to be used has come before the Council. As a result of a rather extensive correspondence both from those favoring its use as described and those opposed, the Judicial Council is of the opinion that the prescribing and directing of its use in the case of a patient whom the prescriber has not examined or seen is an unethical medical procedure. The Council recognizes that advice and help in difficult cases is often furnished by those in a position to be of possible or probable assistance but it believes that the great dangers accompanying the use of radium removes that particular remedy from the field of advice without personal contact with the patient.

PHYSICIANS AND CULTISTS

Many inquiries concerning the relations of the various cults to the regular profession have been received. The inquiries pertain particularly to the osteopath and the optometrist. Some of our members are giving lectures in osteopathic and optometric schools and addresses before their societies. Some members are associated by a common waiting room in offices with them. Some members are by mutual agreement professional associates principally in the field of surgery. There are some instances of partnership in practice. All of these voluntarily associated activities are unethical. Such relations certainly do not "uphold the dignity and honor of (our) vocation" or "exalt its standards." In case of emergency no doctor should refuse a sufferer knowledge or skill which he posseses to the sufferer's harm but this is quite a different matter from that of a consultant or practitioner who by consulting or practicing with him assists a cultist to establish himself as competent and on the same basis of medical knowledge as a doctor of medicine. By the very nature of the education and training of each, a consultation with a cultist is a futile gesture if the cultist is assumed to have the same high grade of knowledge, training and experience as is possessed by the doctor of medicine. Such consultation lowers the honor and dignity of the profession in the same degree to which it elevates the honor and dignity of the irregular in training and practice. Practicing as a partner or otherwise has the same effect and objection. Teaching in cultist schools and addressing cultist societies is even more reprehensible, for such activities give public approval by the medical profession to a system of healing known to the profession to be substandard, incorrect and harmful to the people because of its deficiencies. There hardly can be a voluntary relationship between a doctor of medicine and a cultist which is ethical in character.

FINALITY OF STATE ACTION

The constitutions and by-laws of some constituent associations provide that the action of the Council or other authoritative body of the state association in matters of discipline over its members is final. The Judicial Council calls attention to the incorrectness of this statement, which might and probably has been prejudicial to the rights of some members under disciplinary action. The only interpretation of the statement that can be made is that the action of the state authority is final so far as the state association is concerned. Notwithstanding this statement in the constitutions and by-laws, the accused has the right of appeal to the Judicial Council of the American Medical Association by virtue of chapter IX, section I, of the By-Laws of the American Medical Association reading in part as follows:

> "The Judicial power of the Association shall be vested in the Judicial Council, whose decision shall be final. This power shall extend to and include . . . In all cases which arise (c) between a member or members and the component society to which said member or members belong, . . . the Judicial Council shall have appellate jurisdiction in questions of law and procedure but not of fact," and also "The Judicial Council shall have jurisdiction on all questions of ethics and in the interpretation of the laws of the organization."

It is the opinion of the Council that wherever a statement of finality of the action of the state authority is made the wording should be amended by the addition of the words "except as provided in the By-Laws of the American Medical Association," or some similar phrase.

Respectfully submitted.

GEORGE EDWARD FOLLANSBEE, Chairman.
JOHN H. O'SHEA.
EDWARD R. CUNNIFFE.
WALTER F. DONALDSON.
JOHN W. BURNS.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates of the American Medical Association:

1. Reports from a large number of medical schools indicate that, as a result of the Council's survey, substantial improvements are being made in faculty personnel, student selection, clinical facilities, buildings and equipment. Nineteen schools have reported budget increases which average $43,300.

2. The Council is now preparing a final report of the survey which will present a fairly comprehensive review of medical education based on the extensive data collected during the past three or four years. Such a commentary will inevitably become an invaluable source of information to all who may be interested in medical teaching and will constitute a permanent record of the Association's unparalleled contributions in the field of professional education.

3. In May 1936 the House of Delegates adopted a report of the Reference Committee on Medical Education as follows:

> Your committee commends the plans for the study of graduate training of physicians in the various phases and regards graduate training as one of the most pressing problems facing the medical profession at the present time.

During the past year the Council has commenced a study of graduate medical education, a field which is almost boundless and enormously complex. For convenience it has been subdivided into three major categories: Extension Courses, Apprenticeships, and Opportunities for Graduate Study. In the first category are found the educational programs of county and state societies together with many other similar activities. The second category consists chiefly of internships and residencies, the modern equivalent of the old fashioned apprenticeships. Under the caption "Opportunities for Graduate Study" will be listed those offerings, for the most part under university auspices, which, though not necessarily leading to a degree, conform to the generally accepted standards of graduate work.

4. Since the last meeting of the Association, the Council has begun to inventory the field of extension courses. When the House of Delegates meets, eighteen states will have been visited for the purpose of gathering data. Each state has peculiar problems which must be individually studied and solved. State societies, departments of health, medical schools and foundations may all be more or less concerned in planning and administering such courses. The federal government, through its social security funds, is now actively entering this field. The officers of the respective state societies must be alert and energetic if the medical profession is to retain its control over this most important function.

5. During the Atlantic City session, the Advisory Board for Medical Specialties undertook to create a "Commission on Graduate Medical Education." This commission, it was stated, would not undertake to inspect or appraise institutions engaged in graduate teaching, nor would it invade the sphere of action of the Council. Dr. Robert Buerki of Madison, Wis., will be director of the commission's studies.

6. Patients in 1937 entered hospitals at the rate of one every 3.4 seconds. The rate of growth in hospitals is equivalent to one hospital of seventy-six beds for each day, Sundays and holidays included. New hospitals in addition to the 6,128 already

registered include 100 hospitals opened but whose registration is pending, seventy under construction, and 179 planned and being developed. The rate of occupancy in general hospitals is 70 per cent of capacity. There are 6,128 hospitals, 1,124,548 beds, 55,566 bassinets, 932,912 births, 944,436 average census, and 9,221,517 patients admitted, of which 2,509,925 were in governmental hospitals and 6,711,592 were in nongovernmental hospitals. Thus nearly three fourths of the patients are cared for in private hospitals having only about one fourth of the bed capacity of all hospitals in the country.

7. In accordance with the resolution of the House of Delegates adopted at the 1934 session, the Council is proceeding with its analysis of the attending staffs of approved hospitals. A constantly increasing number of such institutions have made membership in the county society a prerequisite for staff appointments.

8. The Standard Nomenclature of Disease, now published by the Association, is being advocated in all cases in which hospitals are at liberty to consider the adoption of a new terminology. The ultimate advantage of uniformity in this respect needs no special comment.

9. The Mental Hospital Survey Committee has requested and received the effective cooperation of the Council. An officer of the committee has spent considerable time at Association headquarters studying our records, and the secretary of the Council has considered with Dr. Walter L. Treadway, chairman of the committee, means of securing additional data concerning the mental hospitals.

10. In considerable numbers, students unable to secure admission to medical schools in this country or in Canada still migrate to European countries and, after completing a medical course, return to the United States to practice. The problem is aggravated by the large number of foreign born physicians now seeking asylum over here. Some states complacently accept foreign credentials at their face value. Others write to the Council for an evaluation of such documents. Obviously, the American Medical Association has no means of securing official reports from European schools or of making personal inspections, and it is therefore utterly impossible for the Council to underwrite or guarantee the education of a medical student trained abroad. The state of California has passed a law that in order to be eligible for the license examination all candidates presenting foreign credentials must spend at least one year in an approved hospital or medical school in the United States.

11. It is thirty-one years since the publication of the Council's first classification of medical schools. Although all but one of the states have statutory authority to exclude from the licensing examination the graduates of low grade medical schools, in 1937 there were 233 such graduates licensed in thirteen states. It would seem that state medical societies might be more active in demanding that the standards of our profession be upheld and the interests of the public protected by restricting the privilege of licensure to those known to have been trained in first class medical schools.

12. Within the year, two have been added to the Council's staff, Dr. Hamilton H. Anderson and Dr. Stuart P. Cromer. The latter succeeds Dr. Carl M. Peterson, who has become Secretary of the Council on Industrial Health.

13. The Council has prepared exhibits for the conventions of the American College of Surgeons at Chicago, the American Hospital Association at Atlantic City, the Catholic Hospital Association at Chicago, the Tri-State Hospital Association at Chicago, the New England Hospital Association at Boston, a Hospital Bazaar at Cumberland, Md., and at the Capitol Theater, Davenport, Iowa, in addition to the Atlantic City session, and has been officially represented at the inauguration of President Rufus C. Harris of Tulane University and President Oliver C. Carmichael of Vanderbilt University.

14. As usual, the Council has prepared material for special issues of THE JOURNAL—the Educational Number, Aug. 28, 1937; the Hospital Number, March 26, 1938, and the State Board Number, April 23, 1938. It has contributed to the revision of the Interns' Handbook and published the Proceedings of the Annual Congress on Medical Education and Licensure. For the Fifteenth Edition of the American Medical Directory, the Council has revised the data on hospitals and medical schools.

15. During the year ended March 31, 1938, 319 hospitals have been visited, nine medical schools and fourteen schools for the training of technicians.

16. The Council has cooperated with the Bureau of Exhibits in preparing material for the 1939 fairs at San Francisco and New York.

17. Some changes have been found necessary in the Essentials of an Acceptable School of Occupational Therapy. In revised form they are submitted for ratification.

Respectfully submitted.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS.
RAY LYMAN WILBUR, Chairman.
FREDERIC A. WASHBURN.
J. H. MUSSER.
FRED MOORE.
REGINALD FITZ.
FRED W. RANKIN.
CHARLES GORDON HEYD.
WILLIAM D. CUTTER, Secretary.

REPORT OF THE COUNCIL ON SCIENTIFIC ASSEMBLY

To the Members of the House of Delegates of the American Medical Association:

The Council on Scientific Assembly has given official attention to matters which properly come before it for consideration.

The annual Conference of Section Secretaries with the Council was held in Chicago on Dec. 17, 1937. At this conference the desirability of effecting some changes in the nature of the programs of the sections of the Scientific Assembly was fully discussed, and it is possible that some such changes will be instituted at the next annual session in an effort to vitalize the section programs and to permit important scientific subjects of mutual interest to be presented and discussed at joint meetings of two or more sections. While it is true that in the past symposiums participated in by two sections have been presented, it is possible that the interest in the scientific work of the Association may be greatly increased and the value of section programs enhanced through an arrangement that will permit joint meetings participated in by several sections, such meetings to be held on the last day of the Scientific Assembly at each annual session.

At the annual session in 1937 the program of the General Scientific Meetings on Tuesday morning was divided so that in one section the discussions pertained to subjects in the field of general medical practice while in the other section the program was devoted entirely to surgical subjects. This new arrangement met with such enthusiastic response that it will be continued. At the San Francisco session the entire program for Tuesday will be divided into two sections, one dealing with general medicine and the other devoted entirely to the discussion of surgical subjects. The attendance at the General Scientific Meetings and the interest in the programs presented have constantly increased until these meetings now constitute a distinct feature of each annual session. It is the earnest desire of the Council on Scientific Assembly to make these programs as helpful as possible to the rank and file of the profession.

The official program of the San Francisco session is submitted as a part of the report of the Council on Scientific Assembly. The Council desires to express openly its appreciation of the valuable service rendered by the section officers, who have been responsible for the preparation of the section programs.

At a later time during this session the Council on Scientific Assembly will submit to the House of Delegates nominations for Affiliate Fellowship.

Respectfully submitted.

JAMES E. PAULLIN, Chairman.
J. GURNEY TAYLOR.
A. A. WALKER.
J. C. FLIPPIN.
CLYDE L. CUMMER.
IRVIN ABELL, President-Elect. } Ex officio.
MORRIS FISHBEIN, Editor, THE JOURNAL. } Ex officio.
OLIN WEST, Secretary. } Ex officio.

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SATURDAY, APRIL 30, 1938

THE BLEEDING PEPTIC ULCER

Considerable differences of opinion are apparent as to the incidence, the mortality rates and the treatment of bleeding peptic ulcer. Hurst [1] found the incidence of hemorrhage in all types of peptic ulcer about 27 per cent and the mortality from the same source about 1.5 per cent in general practice. Since the incidence is 27 per cent, the mortality from hemorrhage in all cases of ulcer is about 0.4 per cent. The mortality in patients with ulcer admitted to Guy's Hospital because of hemorrhage was 4.8 per cent. The mortality from hemorrhage in patients with a history of hemorrhage is under 2.5 per cent and the mortality from hemorrhage in all cases of ulcer, including those in which bleeding never occurred, is about 1 per cent. Hurst concludes that since the total mortality as the result of all surgical procedures for gastric and duodenal ulcers is much greater than that from hemorrhage in all cases of ulcer, and as hemorrhage is by no means rare after operations on patients with ulcer who have already bled, surgical treatment cannot be regarded as a means of prophylaxis against fatal hemorrhage.

The conservative treatment of bleeding gastroduodenal ulcer consists of rest in bed, morphine, starvation for the first twenty-four hours, salt solutions with or without dextrose by rectum and later by a graduated diet and alkalis. Blood transfusion both as replacement therapy and for its effect on the coagulability of the blood and on hematopoiesis has been widely adopted in this country as an important adjunct to the general conservative treatment. The advantages of administration of large doses of epinephrine, iron and the various hemostatics are negligible.

An interesting and radical innovation was introduced by Meulengracht [2] of Copenhagen, who reported a sensationally low mortality of less than 1 per cent among 251 patients admitted to Bispebjerg Hospital because of severe hematemesis or melena. He fed his patients an abundant and varied diet in purée form from the first day of admission to the hospital. He believed that food and alkalis, by neutralizing the gastric acidity, would prevent further penetration by the ulcer and reduce the gastric motility, while the supply of nourishment and vitamins would favor the healing process. Woldman [3] reported a series of twenty-one cases of severe gastroduodenal hemorrhage in which treatment by the continuous administration of colloidal aluminum hydroxide by means of a special drip apparatus was successful.

Finsterer,[4] who for the past two decades has consistently urged the most radical attitude toward bleeding peptic ulcer, believes the remarkable results obtained by Meulengracht were due to the fact that he dealt with superficial ulcers or cases of ulcerative gastritis. He calls attention to the reports of Bulmer, Aitken, Gordon Gordon-Taylor, Chiesman, Hinton and others whose mortality statistics are in sharp contrast to those of Babey, Hurst and Conybeare. Bulmer [5] reported, in an analysis of cases treated at the Birmingham Hospital for a period of thirty years, a mortality of 10.7 per cent, the death rate among men being at least double that among women and occurring at rather a later age. Aitken reported a mortality of 47.2 per cent. According to Gordon Gordon-Taylor, the mortality in cases of hematemesis from chronic ulcer of the stomach or duodenum treated medically at the Middlesex Hospital from 1924 to 1933, in which a second large hemorrhage took place, was no less than 78 per cent and with each successive bleeding the death rate became higher. Chiesman [6] reported a mortality of 25 per cent among 191 patients admitted to St. Thomas's Hospital during the period 1925-1931. This mortality was equivalent to that of perforated ulcers in the same group. Bleeding continued or recurred in forty-eight males and in fourteen females twenty-four hours after they came under treatment. Mortality in this group was 74 per cent. Postmortems on forty-five of these revealed that the common cause of repeated hemorrhage was a partially eroded vessel of considerable size in the floor of an ulcer, the type of the ulcer being callous in thirty cases and acute in seven; multiple ulcers were present in other cases. He concludes that, in the group of cases presenting a mortality of 74 per cent, operative treatment might have improved the recovery rate. From the clinical histories and the postmortem observations in these cases it is evident that there is a special form of bleeding ulcer caused by erosion of a large artery and capable after one or two massive hemorrhages of exsanguinating the patient. Bleeding of this type was considered by von Mikulicz a most urgent emergency. Indeed, one is reminded of the classic

1. Hurst, A. F.: The Incidence, Mortality and Treatment of Hemorrhage, Guy's Hosp. Rep. **86**: 135 (Jan.-April) 1936.
2. Meulengracht, E.: Treatment of Hematemesis and Melena with Food: The Mortality. Lancet **2**: 1220 (Nov. 30) 1933.
3. Woldman, E. E.: The Treatment of Hematemesis and Melena by a Continuous Aluminum Hydroxide Drip: Report of Twenty-One Cases, Am. J. M. Sc. **194**: 333 (Sept.) 1937.
4. Finsterer, Hans: Indikationsstellung zur operativen Behandlung der akuten schweren Magenblutung, Wien. med. Wchnschr. **87**: 302 (March 13) 1937.
5. Bulmer, Ernest: Mortality from Hematemesis, Lancet **2**: 720 (Oct. 1) 1932.
6. Chiesman, W. E.: Mortality of Severe Hematemesis from Peptic Ulcers, Lancet **2**: 722 (Oct. 1) 1932.

description by Moynihan of a callous, deeply penetrating duodenal ulcer with exposed stiff arteries. Such bleeding is not likely to stop of itself and waiting is more dangerous than operation. In such cases Finsterer's dictum of operation within the first twenty-four to forty-eight hours has validity and is supported by Gordon Gordon-Taylor, Tixier and Clavel, Allen and others. In a series of thirty-five early partial gastric resections performed by Finsterer for severe hemorrhage there was only one death from pneumonia. In a group in which a late operation was performed his mortality amounted to 30 per cent.

The first and most urgent problem then is to determine whether the bleeding comes from a superficial ulceration or from a deeply penetrating ulcer. A history of a long existing ulcer, of persisting severe pains characteristic of penetration and adhesion to a neighboring viscus, and the roentgenologic niche are all evidences of a penetrating callous ulcer. Means would limit operative procedure to patients bleeding after 50 years of age or those having repeated hemorrhages. The problem of the bleeding peptic ulcer is certainly not a case of surgery versus medicine. On the contrary, the cooperation of the internist and the surgeon is most desirable. Each case must be evaluated in the light of its history, roentgenologic appearances, the age of the patient and the type of bleeding. If surgical operation appears to be indicated, it should not be unduly delayed.

FEDERAL FOOD AND DRUG BILL CONDEMNED

The food and drug bill recently reported to the House of Representatives by the Committee on Interstate and Foreign Commerce [1] has been vigorously condemned in a minority report [2] signed by six members of the committee and in a letter from the Secretary of Agriculture embodied in that report. This condemnation is based primarily on the proposal in section 701 (f) of the bill to empower the United States district courts throughout the country (1) to review certain orders that may be promulgated by the Secretary of Agriculture under authority of the proposed law, (2) to restrain the secretary from putting such orders into effect, and (3) to direct the secretary to take whatever further action the court may think justice requires. Such reviews may be initiated in any one of eighty-three district courts, on the petition of any importer, producer, manufacturer, distributor or dealer in foods, drugs, diagnostic and therapeutic devices and cosmetics who feels that he is aggrieved by the secretary's order. The idea of investing the district courts of the country with such authority as this bill proposes discloses a novel concept of the relations between the administrative, legislative and judicial functions of our government. This proposal for the enactment of court review legislation savors strongly of the influences that have heretofore prevented the inclusion of adequate standards in any pending legislation relating to drugs and diagnostic and therapeutic devices and that brought about the attenuation of the restrictions on false and fraudulent advertising proposed in such legislation.

Concerning the section of the bill denounced by him, the Secretary of Agriculture says:

> I am of the opinion that if section 701 (f) remains in the bill its effect will be to hamstring its administration so as to amount to a practical nullification of the substantial provisions of the bill. . . .
>
> It is the Department's considered judgment that it would be better to continue the old law in effect than to enact S. 5 with this provision.

Of the same section of the bill, the minority report of six of the committee members says:

> If this bill is enacted into law with section 701 (f), the court-review section, in it, as reported by a majority of the committee, what started out as an effort on the part of the advocates of a more adequate food and drug law to enlarge the scope of the existing law, to fill in the loopholes in it, and to put more teeth into it, will end with having accomplished the directly opposite result and years of earnest effort will have gone for worse than naught.

Official, disinterested denunciations such as these seem to justify a demand by every consumer of foods and drugs and every user of diagnostic and therapeutic devices and of cosmetics that his representative in Congress use his best efforts to prevent the enactment of the food, drug, device and cosmetic bill, S. 5, in the form proposed by the committee. The defeat of the bill in its entirety might not be altogether disadvantageous for it would provide an opportunity for the introduction into later legislation of proper standards for drugs and devices. The delay would provide time also for search for a more promising method of controlling the introduction of new drugs than that proposed in the pending bill.

1. S. 5: H. R. Rep. 2139, Part 1. 75th Congress. Discussed editorially in The Journal, April 23, page 1370.
2. S. 5: H. R. Rep. 2139, Part 2. 75th Congress.

THE STUDY OF DISEASE AMONG BRITISH POST OFFICE EMPLOYEES

Observations based on the 260,000 employees of all ages and varied activities of the English post office system enabled Bashford [1] to present convincing evidence of the reciprocal dependence of industry and medicine. The post office is unique in that there is in England no other body of industrial workers of anything approaching its size that has accurate sick records analyzed yearly in terms of occupational groups and geographic distribution. The records date from the middle of the last century and hence lend themselves readily to a certain type of study.

The incidence of pulmonary tuberculosis in this group compares favorably with that in the community at large and during the last twenty years has shown a steady downward trend. In an analysis of 3,755 cases observed

1. Bashford, H. H.: The Contribution of Industry to Medicine, Proc. Roy. Soc. Med. 31: 185 (Jan.) 1938.

over the last twenty years, it was found consistently that in only 50 per cent of all new cases of pulmonary tuberculosis was it ever possible to return to active duty. There was a further wastage of 48 per cent during the following ten years because of recurrent pulmonary tuberculosis or other forms of ill health. A follow-up study of 430 employees with gastric or duodenal ulcer showed that 31 per cent, no matter how treated, incurred regularly at least a month's sick absence every year for recurrent digestive disorders or other forms of ill health. A further 27 per cent had sick absences of shorter periods. This industrially unsatisfactory record should certainly receive close attention. The post office was one of the first pensionable services to accept persons with adolescent or "orthostatic" albuminuria. Thirty years ago Bashford examined a group of thirty and reexamined them after periods of service varying from seven to fourteen years. Twenty per cent still exhibited the condition but were apparently in good health. Seventeen years later, with the exception of three who had left the service for extraneous causes, two who could not be traced and one who had died from acute nephritis, the whole group again was examined and all found in good health.

Bashford includes a brief report of the three year experiment with vaccine in the attempted prevention of colds. The vaccine used contained Bacillus influenzae, Staphylococcus pyogenes, Streptococcus pyogenes, Pneumococcus types I and II, B. coryzae segmentosus and B. friedländer. The colds in adequate control groups were also recorded. The average sick absence from colds among those receiving the vaccine during the first year of the experiment was less by half of one day than that of the noninoculated group. During the second year the average sick absence for such disorders among the inoculated was one-tenth day higher than that in the noninoculated controls, and during the third year two-tenths day higher than that of the controls. While no claim to finality is made, the results indicated definitely that the routine provision of this vaccine against colds for the staff as a whole was not yet a measure that could be justified by the results experienced.

The experiences with quarantine for infectious disease may have far reaching significance. For some years any contact subsequently acquiring infectious disease had to be reported. Of 17,844 contacts with scarlet fever, only one in 251 subsequently acquired the disease. Of 17,436 contacts with measles, only one in 670 became infected, and out of 7,697 contacts with diphtheria, only one in every 274 became ill with that disease.

About 30 per cent of all sickness is included in the respiratory group of disorders, and this is true both for men and for women. About 10 per cent is included in the digestive group and this is again true of both sexes. Surprisingly, about 10 per cent of male illness was incurred in the rheumatic group of disorders, while it is recorded in only 4 per cent of the women. Nervous disorders accounted for 14 per cent of the women's disability but only 6 per cent of the men's absences. Finally there is that vague class of illness which, while there would seem to be no factor of true malingering, suggests a condition of self pity and making much of little. The examination of forty cases of repeated, relatively trivial accumulating sick absences showed an underlying factor of apparently this type. Over a period of four years, these forty people had among them incurred 736 sick absences, totaling 6,194 days. Kindly advice was given that, if these sick records continued, retirement on grounds of persistent ill health would have to be considered. The following six months showed only fifty-four days' sick absence among the whole forty. In other words, their six monthly average of illness dropped abruptly from nineteen to one and three-tenths days per person.

Current Comment

BILE SALTS AND ARTHRITIS

Observations by several clinicians independently that the development of jaundice in certain arthritic patients produced a definite remission in joint symptoms has stimulated two further studies. Hench[1] has just made available the results of clinical and chemical studies on thirty-one patients whose rheumatic symptoms were partially or completely relieved coincidentally with the onset of spontaneous jaundice. The phenomenon appeared to depend more on the quantity than the quality of jaundice, and the concentration of serum bilirubin served as a general index of the degree of relief. The analgesic effect of jaundice was usually noticed within the first three days after the jaundice became readily visible. Twenty-two of the thirty-one new patients obtained complete relief and the other nine were largely if not entirely relieved. Attempts to reproduce the relief by administration of whole bile and certain of its constituents were made. Transfusions of deeply jaundiced blood were tried and jaundice was produced by the administration of toluylenediamine; by these means and with the rather small doses used, the phenomenon of arthritic relief was not reproduced. Thompson and Wyatt,[2] reporting also in a recent issue of the *Archives of Internal Medicine,* first noted the effect of administration of various bile constituents on rabbits. Then they gave a patient with chronic nonspecific atrophic arthritis daily doses of 10 mg. of bilirubin per kilogram intravenously for four days, and on the fifth, sixth and seventh days added 40 mg. of sodium dehydrocholate per kilogram. After four injections of

1. Hench, P. S.: Effect of Jaundice on Chronic Infectious (Atrophic) Arthritis and on Primary Fibrositis: Further Observations; Attempts to Reproduce the Phenomenon, Arch. Int. Med. **61**: 451 (March) 1938.
2. Thompson, H. E., and Wyatt, B. L.: Experimentally Induced Jaundice (Hyperbilirubinemia): Report of Animal Experimentation and of the Physiologic Effect of Jaundice in Patients with Atrophic Arthritis, Arch. Int. Med. **61**: 481 (March) 1938.

bilirubin, slight icterus developed but was not accompanied by relief of symptoms. Within eight hours after the fifth injection, however, definite relief from pain in all the involved joints occurred. The combination of bilirubin and bile salt was then given to eight patients with chronic atrophic arthritis. The combination of bilirubin and bile salt given by the technic which these investigators finally found satisfactory appeared to be effective in the amelioration of symptoms of atrophic arthritis, although neither of the constituents alone produced this effect. Further study and confirmation are required before these observations can be applied generally in the treatment of atrophic arthritis, but the preliminary observations seem most suggestive of a new avenue of approach to this difficult problem. Moreover the similar amelioration of arthritis in some women during pregnancy as recently noted by Hench [3] suggests that the agents responsible for both phenomena are at least closely related but that if a chemical substance it is neither bilirubin nor a strictly female sex hormone.

PROPOSED FEDERAL SANCTION OF OSTEOPATHY

Osteopathy will be sanctioned as a method of treating sick and injured federal employees under the United States Employees' Compensation Act, as amended,[1] if a bill [2] favorably reported to the House of Representatives by its Committee on the Judiciary is enacted. The bill was introduced by Congressman Drew of Pennsylvania, an osteopath. As introduced, it proposed to place osteopaths on the same plane as qualified doctors of medicine, under the United States Employees' Compensation Act, making no reference to the restrictions placed on them by the laws of many of the states in which they practice. The committee, however, in making its report has recommended that such osteopathic treatment as may be rendered under the act, at the expense of the United States government, be limited to treatment tolerated by the laws of the state in which it is administered. However, not every osteopath will be permitted to treat government employees even to that extent, but only such as are designated by the United States Employees' Compensation Commission. The osteopaths of the country have maintained continued pressure to procure the favorable report that has now been made on this bill. They will doubtless continue that pressure in the hope of procuring its enactment. Whether they do or do not succeed will depend on the physicians of the country. If every physician who believes that osteopathy is not a safe method of diagnosing and treating disease and injury protests to his congressman against the enactment of this bill, its defeat will be assured.

3. Hench, P. S.: The Ameliorating Effect of Pregnancy on Chronic Atrophic (Infectious Rheumatoid) Arthritis, Fibrositis, and Intermittent Hydrarthritis, Proc. Staff Meetings, Mayo Clinic **13**: 161 (March 16) 1938.

1. United States Code, 1934 edition, title 5, chapter 15.
2. H. R. 4650; H. R. Rep. No. 2170. 75th Congress.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

State Medical Meeting at Pasadena May 9-12.—The sixty-seventh annual meeting of the California Medical Association will be held at the Hotel Huntington, Pasadena, May 9-12, under the presidency of Dr. Howard Morrow, San Francisco. The Los Angeles County Medical Association and its Pasadena branch will act as hosts, with Dr. George H. Kress, Los Angeles, president of the former, delivering the address of welcome. The out of state speakers will include:

Dr. Udo J. Wile, Ann Arbor, Mich., The Relation of Syphilis to Surgical Problems.
Dr. Tinsley R. Harrison, Nashville, Tenn., Cardiac Dyspnea.
Dr. Alexis F. Hartmann, St. Louis, Studies on Hypoglycemia in Infants and Children.
James B. Hamilton, Ph.D., New Haven, Conn., Experimental Production in Animals of Conditions Similar to Those of the Adrenal Syndrome in Humans.
Dr. Thomas D. Moore, Memphis, Tenn., The Cystoscopic Implantation of Radium Element in Tumors of the Bladder.

Dr. Harrison, with another guest speaker, Dr. Alfred Blalock, Nashville, will conduct a clinical pathologic conference Tuesday and a symposium on shock. There will also be symposiums on vitamins and nucleus pulposus rupture and its relation to injury. Entertainment will include a trip to Griffith Park Planetarium, golf and a trip to a motion picture studio. The president's dinner will be held Tuesday night.

CONNECTICUT

Changes in Health Officers.—Dr. John E. Stoddard has been appointed health officer of Meriden to succeed Dr. Michael J. Sullivan. Dr. Winfield E. Wight is the new health officer of Thomaston, succeeding Dr. James H. Kane, resigned. Dr. Ernest R. Pendleton has been appointed health officer of the town of Granby.

Society News.—The New Haven Committee on Social Hygiene has been reorganized under the auspices of the New Haven Foundation and the New Haven Department of Health. The new name will be New Haven Child Hygiene Association; Miss Mary Harkin has been chosen executive secretary. ——Dr. Arvid Lindau, professor of general pathology and bacteriology, University of Lund, Sweden, addressed a special meeting of the Yale Medical Society March 24 on "Benign Lymphogranuloma (Sarcoid of Boeck)."

DISTRICT OF COLUMBIA

Annual Scientific Assembly.—The Medical Society of the District of Columbia will hold its annual scientific assembly May 4-5 in the Medical Society Building, 1718 M. Street N.W., Washington. The out of town speakers on the program include:

Dr. William P. Healy, New York, Carcinoma of the Corpus Uteri: Treatment and Prognosis.
Dr. Perrin H. Long, Baltimore, The Mode of Action and Toxicity of Sulfanilamide.
Dr. Ramon Castroviejo, New York, Eye Surgery (motion picture).
Dr. Roy Upham, New York, New Trends in Diseases of the Stomach.
Dr. Jacob Sarnoff, Brooklyn, Diseases of the Breast (motion picture).
Dr. Paul Titus, Pittsburgh, Human Sterility.

A public meeting Wednesday evening will be addressed by Dr. William R. Houston, Austin, Texas, on "Western Medicine in China." Hon. Hatton W. Summers will address the luncheon Wednesday on "Natural Laws in Government." Clinics will be offered and the annual banquet will be Thursday evening at the Mayflower Hotel.

ILLINOIS

Society News.—Dr. Marcus Pinson Neal, Columbia, Mo., addressed the St. Clair County Medical Society in East St. Louis April 7 on "Reactive Blood Cells in Acute Infections." ——Dr. Arthur Carlton Ernstene, Cleveland, discussed "Differential Diagnosis of Coronary Artery Disease" before the Sangamon County Medical Society, Springfield, April 7.

Chicago

University News.—The John and Mary Markle Foundation of New York City has made a grant of $10,000 to support research work on neurophysiology for three years under the supervision of Dr. Ernst Gellhorn, professor of physiology, University of Illinois College of Medicine.

The Luckhardt Lecture.—Dr. Henry E. Sigerist, William H. Welch professor of the history of medicine, Johns Hopkins University School of Medicine, Baltimore, delivered the Arno B. Luckhardt Lecture at Albert Merritt Billings Hospital April 28; his subject was "Principles of Greek Medicine."

Former Mental Patients Form Society.—Sixty-four former patients of the Psychiatric Institute of the Illinois Research and Educational Hospitals, University of Illinois, organized the "Association of Former Patients of the Psychiatric Institute of the University of Illinois" at a meeting April 3. Designed primarily to reestablish its members in society, the new organization aims to help the physicians of the institute to study the subsequent adjustment of the patients, to engage in an educational campaign for the purpose of changing the attitude of the community toward mental disease and to promote the economic interest of former patients. The new association plans to form an employment agency and to issue a monthly bulletin. At the time of this report the association had seventy-five members.

INDIANA

Personal.—Dr. Harry H. Botts, medical officer in charge of the Veterans' Administration Facility, Veterans' Administration Hospital, near Marion, has been transferred to the facility at Chillicothe, Ohio, succeeding Dr. Dennis J. Murphy. The latter will take over the Marion post.

Society News.—Dr. Cyrus W. Rutherford, Indianapolis, has been elected president of the Indiana Academy of Ophthalmology and Otolaryngology, succeeding Dr. Emory E. Holland, Richmond.——The Northeastern Indiana Academy of Medicine was addressed in Kendallville March 31 by Drs. Laurence E. Hines and James Roscoe Miller, Chicago, on diagnosis and treatment of coronary occlusion.——The Indianapolis Medical Society was addressed April 26 by Drs. Charles P. Emerson on "The Physical Basis of Emotional Disturbances" and Charles R. Bird, "Diagnostic Trends and Psychoneurosis." Dr. Fred L. Adair, Chicago, discussed "Maternal, Fetal and Neonatal Morbidity" before the society March 29.

State Tuberculosis Meeting.—The Indiana Tuberculosis Association and the Indiana Trudeau Society met in joint annual session in Indianapolis April 20-21. The speakers included:

Dr. Philip H. Becker, Crown Point, Pneumoconiosis.
Dr. Robert A. Staff, Richmond, Laboratory Diagnosis of Tuberculosis.
Dr. Paul D. Crimm, Evansville, Treatment of Childhood Tuberculosis.
Dr. Donald W. Brodie, Oaklandon, Extrapulmonary Tuberculosis.
Dr. Mason B. Light, Indianapolis, Specular Examination.
Dr. Jerome V. Pace, Rockville, Malignancy of the Lung.
Dr. Harvey L. Murdock, Fort Wayne, Silicosis.

At a general session the evening of April 20 the speakers included Drs. Calvin C. Applewhite, U. S. Public Health Service, on "Place of Tuberculosis Control in a Whole Time Health Program" and Robert G. Bloch, Chicago, "The Approach to the Tuberculosis Problem."

KANSAS

State Medical Meeting at Wichita.—The seventy-ninth annual session of the Kansas Medical Society will be held in the Wichita Forum, May 9-12, under the presidency of Dr. Jacob F. Gsell, Wichita. The speakers will include:

Dr. Harold E. Robertson, Rochester, Minn., Diseases of the Gallbladder, Bile Ducts and Liver: Practical Considerations.
Dr. Horton R. Casparis, Nashville, Tenn., The Medical Aspects of Child Behavior.
Dr. William B. Carrell, Dallas, Texas, Fractures of the Hip in the Aged with Indications for Nails and Bone Graft.
Dr. John H. J. Upham, Columbus, Ohio, President, American Medical Association, Economic Aspects of Medicine.
Dr. Louis J. Karnosh, Cleveland, Mileposts in Modern Psychiatry.
Dr. Thomas D. Allen, Chicago, What Kind of Cooperation Should There Be Between the Ophthalmologist and His Confrères in Other Specialties?
Dr. Aaron Arkin, Chicago, Cardiovascular Syphilis: Diagnosis and Therapy.
Dr. Alfred I. Folsom, Dallas, Some Practical Considerations in the Treatment of Chronic Gonorrhea.
Dr. Vernon C. David, Chicago, Some Etiologic Considerations of Cancer of the Large Bowel.
Dr. Dean D. Lewis, Baltimore, The Differential Diagnosis of Bone Tumors.
Dr. Harold I. Lillie, Rochester, Minn., General Considerations of the Physiology of the Nose as Pertains to General Practice.
Dr. Fred E. Angle, Kansas City, Undulant Fever—Its Present Clinical Status.
Dr. Clifford J. Mullen, Kansas City, Analysis of Program for the Blind of the Kansas State Board of Social Welfare.
Dr. Harold W. Powers, Topeka, Hoarseness.
Dr. La Verne B. Spake, Kansas City, Diagnosis and Classification of Surgical Mastoiditis.
Dr. Lyle S. Powell, Lawrence, Cycloplegics, Mydriatics and Miotics.

There will be luncheons, and entertainment will include golf and skeet tournaments, a golf and skeet banquet, the alumni "round-up" Tuesday evening, and the annual banquet Wednesday evening. Radio talks for the public will be delivered during the week. The Sedgwick County Medical Society will be host to the state meeting and will sponsor the "Hall of Health," an exposition showing the basic facts of anatomy and physiology of man, the causes and prevention of disease and the conservation of health.

MASSACHUSETTS

Personal.—Dr. James J. Minot was elected to fill the newly created position of honorary president of the Boston Tuberculosis Association at a recent meeting.

Society News.—Dr. John G. Downing, Boston, discussed "Dermatitis Venenata Due to Cosmetic and Industrial Irritants" before the Norfolk District Medical Society recently. ——At a meeting of the New England Heart Association in Boston March 28 the speakers included Drs. Mark D. Altschule on "Effect of Digitalis in Partial Heart Block" and Herrman L. Blumgart on "Cardiac Cirrhosis."——At a meeting of the Boston Society of Anesthetists, March 15, Dr. Gustave Philip Grabfield spoke on "Clinical Thoughts on Pharmacology of Central Nervous System Depressants."—— The New England Society of Physical Medicine was addressed in Boston March 16 by Drs. Heinrich G. Brugsch and Joseph H. Pratt on "Indications and Contraindications of Ultra Short Wave Therapy."——Dr. Samuel H. Epstein, among others, addressed the Boston Society of Psychiatry and Neurology March 17 on "The Pathogenesis of Syphilitic Optic Atrophy." ——At a joint meeting of the Suffolk District Medical Society and the Obstetrical Society of Boston, March 15, Dr. James M. Faulkner discussed "Heart Disease in Pregnancy."—— Dr. Chester M. Jones addressed the South End Medical Club in Boston, March 15, on "Diagnostic Aspects of Pain Referred from the Digestive Tract."

MICHIGAN

Professor of History of Medicine.—Dr. Alfred O. Lee, professor of modern languages, University of Michigan, Ann Arbor, was recently appointed in addition professor of history of medicine by action of the board of regents, according to the University Hospital *Bulletin*. This appointment is in the College of Literature, Science and the Arts and was granted to Dr. Lee in recognition of the fact that his interest in medical history has led him to include instruction in this subject in his German courses for premedical students and in his course in the sociology of medicine, also given for premedical students. Dr. Lee received his medical degree from the University of Heidelberg, Germany, but has never practiced medicine.

Personal.—Dr. David R. Clark, Detroit, has been made an honorary member of the Wayne County Medical Society.—— Dr. Joseph Stanley Leszynski, Detroit, has been appointed a member of the state board of registration in medicine, succeeding Dr. Frederick H. Cole, and Dr. Francis J. O'Donnell, Alpena, to fill the unexpired term of Dr. Elmer W. Schnoor, Grand Rapids. Drs. Eugene S. Thornton, Muskegon, Harold L. Morris, Detroit, and John J. Walch, Escanaba, have been reappointed to serve as members of the board.——Dr. William H. Haughey, Battle Creek, was guest of honor at a dinner given by the Calhoun County Medical Society April 5 in recognition of his completion of fifty years of medical practice.

Society News.—The Detroit Bar Association and the Wayne County Medical Society were addressed March 21 by Hon. John V. Brennan, judge of recorder's court of Detroit; Hon. Harry S. Toy, former attorney general of Michigan and former justice of the Michigan Supreme Court; Dr. Lowell S. Selling, director, and Dr. John A. Larsen, assistant director, psychopathic clinic, recorder's court; the program was a symposium on the lie detector.——Dr. Charles G. Johnston, Detroit, discussed intestinal obstruction before the St. Clair County Medical Society March 1.——The Ionia-Montcalm Counties Medical Society was addressed in Greenville March 8 by Drs. Henry J. Vandenberg and Charles F. Ingersoll, both of Grand Rapids, on "The Physician's Responsibility in Cancer" and "Practical Problems in X-Ray Therapy" respectively.—— Dr. William Magner, Toronto, addressed the Highland Park Physicians Club and the Wayne County Medical Society April 4 on "The Pathogenesis of Anemia." Dr. Andrew R. Riddell, Toronto, addressed the medical section of the county medical society April 11 on "Silicosis and Its Relation to Tuberculosis and Other Fibrosing Lung Conditions."

MINNESOTA

Graduate Courses in Obstetrics and Pediatrics.—The second statewide graduate course in obstetrics and pediatrics will begin in Crookston and Winona May 8. The Minnesota State Medical Association, the University of Minnesota Medical School and the state department of health are cooperating in the courses, which are being financed by social security appropriations. Other centers where the lectures will be given are: May 11, Hibbing and Willmar; May 18, Albert Lea and Fergus Falls; May 25, Worthington and Bemidji. The sessions in each center will last all day. There will be four lectures in obstetrics and four in pediatrics given by two obstetricians and two pediatricians. Complete information may be obtained from Mr. R. R. Rosell, executive secretary of the Minnesota State Medical Association, 11 West Summit Avenue, St. Paul.

Society News.—Dr. Arvid Lindau, professor of general pathology and bacteriology, University of Lund, Sweden, gave a Mayo Foundation Lecture at the Mayo Clinic, Rochester, April 7 on "Nutritional and Gastrointestinal Diseases." Dr. William E. Gallie, Toronto, lectured April 14 on hernia, and Dr. Arthur W. Meyer, professor of human anatomy, Stanford University School of Medicine, April 25 on "Chronic Kinetic Lesions with Special Reference to Those in the Intervertebral Disks."——Dr. Frederick A. Willius, Rochester, will discuss "A Less Common Manifestation of Rheumatic Heart Disease" before the Hennepin County Medical Society in Minneapolis May 2. The society was addressed March 23 by Ancel Keys, Ph.D., Rochester, on "Diagnosis and Prognosis of the Normal Man"; it was addressed March 16 by Drs. Herbert M. N. Wynne, Minneapolis, on "Treatment of Second Stage Gonorrhea in Women" and Nora M. C. Winther, Minneapolis, on "Diagnosis and Treatment of Trichomonas Vaginalis."——Dr. Albert D. Ruedemann, Cleveland, discussed "Headaches of Ocular Origin" before the Minnesota Academy of Ophthalmology and Otolaryngology recently.

NEW JERSEY

Conference on Maternal and Child Health.—The twentieth annual conference on maternal and child health under the auspices of the state department of health will be held in Elizabeth, May 5. Among the speakers will be Drs. George W. Kosmak, New York, on "Progress in Maternal Welfare in the United States"; Julius H. Hess, Chicago, "Progress in Child Health in the United States," and Ira S. Wile, New York, "Mental Hygiene and the World Around the Child."

NEW YORK

State Medical Meeting.—The one hundred and thirty-second annual meeting of the Medical Society of the State of New York will be held in New York at the Waldorf-Astoria May 9-12 under the presidency of Dr. Charles H. Goodrich, Brooklyn. Speakers at general sessions Tuesday and Thursday afternoons will be:

Mr. Victor E. Negus, London, The Significance of Hoarseness.
Dr. Irvin Abell, Louisville, Ky., President-Elect of the American Medical Association, The Relation of Diabetes to Surgery.
Dr. Charles A. Gordon, Brooklyn, Prevention of Maternal Deaths.
George R. Cowgill, Ph.D., New Haven, Conn., Vitamins and the Clinician.
Dr. Frank H. Lahey, Boston, Some of the Newer Surgical Entities of the Last Decade—Their Diagnosis and Management.
Dr. Louis A. Buie, Rochester, Minn., The Physician's Responsibility in Preventive Proctology.
Dr. Edward A. Strecker, Philadelphia, The Importance of Psychology in the Practice of Medicine.
Russell W. Bunting, D.D.S., Ann Arbor, Mich., Diet and Dental Caries.

Among invited guests who will address the sections are:

Dr. Paul Titus, Pittsburgh, Cesarean Section—Its Relation to Maternal Mortality.
Dr. Benjamin W. Carey Jr., Boston, Urinary Infections in Infants and Children—A Comparison of Therapeutic Methods.
Dr. Arthur J. Vorwald, Saranac Lake, Dust and Disease.
Dr. Raymond A. Vonderlehr, Washington, D. C., Probabilities of a Disastrous Outcome in Treated and Untreated Syphilis.
Dr. Paul A. O'Leary, Rochester, Minn., Significance of Asymptomatic Neurosyphilis.
Dr. Emanuel Ross Mintz, Boston, Kidney Tumors—Some Causes of Poor End Results.
Dr. Royd R. Sayers, Washington, D. C., Influence of Industrial Medical Work on General Health and Medical Science.
Philip Drinker, C. E., Boston, Effects of Breathing the Products of Combustion from the Electric Arc.
Dr. Fremont A. Chandler, Chicago, Surgery in Spastic Paralysis.
Dr. Paul C. Colonna, Oklahoma City, A Reconstruction Operation for Old Ununited Fractures of the Femoral Neck.

New York City

Lecture by Dr. Hammarsten.—Dr. Einar Hammarsten, professor of chemistry, Carolingian Medical Universiy, Stockholm, Sweden, will deliver a lecture May 2 at the Hecksher Foundation Theater under the auspices of the New York Medical College and Flower Hospital. His subject will be "The Duodenum and Its Associates, the Important Hormonal Centrum."

Cornell Alumni Day.—The annual "Spring Day" of the Cornell University Medical College Alumni Association will be held at the college and New York Hospital May 5. During the day there will be a clinical program and the visiting alumni will be the guests of the board of governors of the hospital. At a banquet the speakers will be Edmund Ezra Day, Ph.D., president of Cornell; Mr. Austin H. MacCormick, commissioner of correction, and Dr. Benjamin J. Slater, medical director of the Eastman Kodak Company, Rochester.

Annual Meeting of Milbank Fund.—The sixteenth annual conference of the Milbank Memorial Fund was held March 29-31 at the New York Academy of Medicine. Topics for discussion were new methods of testing for nutritional deficiencies and of appraising the state of nutrition, development of a program for eradication of tuberculosis, certain rural population problems, and the next steps to be taken in formation of a program for control of gonorrhea. Dr. Livingston Farrand, Brewster, N. Y., former president of Cornell University, was chairman of the conference, which was attended by more than 100 physicians and public health workers. Frank Porter Graham, D.Litt., president of the University of North Carolina, Chapel Hill, was the guest speaker at the annual dinner.

Society News.—Speakers at a meeting of the New York Neurological Society with the section of neurology and psychiatry of the New York Academy of Medicine March 1 were Drs. Israel S. Wechsler on "Ephedrine in Treatment of Convulsive Seizures"; Ira Cohen, "Surgical Therapy in Certain Convulsive Disorders," and Sandor Lorand, "Perverse Tendencies and Fantasies—Their Influence on Personality."——Dr. Douglas Quick addressed the New York Roentgen Society, March 21, on cancer of the head and neck.——Dr. Madge T. Macklin, London, Ont., and Clara J. Lynch, Ph.D., addressed the New York Pathological Society at a joint meeting with the New York Gastroenterological Association March 29 on "Heredity in Cancer" and "Experimental Evidence on the Relation Between Heredity and External Factors in Cancer" respectively.

NORTH CAROLINA

State Medical Meeting at Pinehurst.—The eighty-fifth annual session of the Medical Society of the State of North Carolina will be held at the Carolina Hotel, Pinehurst, May 2-4, under the presidency of Dr. Wingate M. Johnson, Winston-Salem. There will be general sessions Tuesday and Wednesday mornings. Among other speakers will be:

Dr. Edward A. Strecker, Philadelphia, Functional Illness and the Medical Psychology Needed by the Practitioner in Its Treatment.
Dr. Charles Gordon Heyd, New York, Clinical Essentials in Abdominal Diagnosis.
Dr. George M. Cooper, Raleigh, A Statewide Program for a Maternity and Infancy Service.
Dr. Robert A. Ross, Durham, Ovarian Cysts and Tumors.
Dr. Charles R. Bugg, Raleigh, The Diphtheria Problem.
Dr. Walter J. Lackey, Fallston, Function and Field of the Family Doctor.
Dr. Vance P. Peery, Kinston, Endoscopy.
Dr. Julian M. Ruffin, Durham, Amebic Dysentery in North Carolina.
Dr. Silas Raymond Thompson, Charlotte, Mortality in Prostatic Surgery; Technic of Prostatic Resection.

Dr. Lester A. Wilson, Charleston, S. C., will be a guest of the section on gynecology and obstetrics, speaking on "Late Puerperal Complications and Care." The North Carolina Public Health Association will hold its annual meeting May 2 with Dr. Wilson G. Smillie, New York, as the guest speaker at a dinner meeting on "Epidemiology of Acute Respiratory Infections."

OHIO

State Medical Meeting at Columbus.—The ninety-second annual meeing of the Ohio State Medical Association will be held in Columbus May 11-12 under the presidency of Dr. John B. Alcorn, Columbus. Headquarters will be at the Neil House. Guest speakers will be:

Dr. Fred Wise, New York, Eczema and Its Treatment by the General Practitioner.
Dr. Clara M. Davis, Winnetka, Ill., The Self Selection of Diet Experiment: Its Significance for Feeding in the Home.
Dr. Perrin H. Long, Baltimore, Observations upon Experimental and Clinical Use of Sulfanilamide and Its Derivatives in the Treatment of Certain Infectious Diseases.

Dr. Irvin Abell, Louisville, Ky., President-Elect of the American Medical Association, Bilateral Renal Calculi.
Dr. Sumner L. S. Koch, Chicago, Infections of the Hand.
Dr. Hugo Roesler, Philadelphia, Hypertension.
Dr. Gabriel Tucker, Philadelphia, Cancer of the Larynx: Diagnosis and Treatment with Observations on the Relationship of Benign Tumors of the Larynx to Cancer.

A round table luncheon has been arranged by the section on public health and preventive medicine, to be held at the Deshler-Wallick Hotel Wednesday noon May 11, with Mr. Leo F. Ey, chief of the division of laboratories, state department of health, and Dr. Warren C. Breidenbach, Dayton, as speakers on "Newer Developments in Public Health Laboratory Service" and "Modern Therapeutic Methods in Pulmonary Tuberculosis: Their Relation to the Public Health." The annual banquet will be held Thursday evening at the Neil House.

Graduate Course in Toledo.—Dr. Wilhelm Dressler, Vienna, was the lecturer for the fourteenth graduate course offered by the Toledo Academy of Medicine April 26-29 on "Diseases of the Heart." The closing lecture was given at a general meeting of the academy on "Pregnancy and Heart Disease, Surgery and Heart Disease and Diagnosis and Treatment of Arrhythmias."

OKLAHOMA

Society News.—The Garfield County Medical Society held a fracture symposium at Enid April 28 with Drs. William B. Carrell, Dallas, Texas, and Earl D. McBride, Oklahoma City, as guest speakers.——Drs. Hugh G. Jeter and Joseph W. Kelso, Oklahoma City, addressed the Pittsburg County Medical Society, McAlester, February 18, on "Diagnosis of Cancer" and "Ectopic Pregnancy" respectively.

OREGON

Society News.—Dr. Richard B. Cattell, Boston, addressed the Multnomah County Medical Society, Portland, March 16, on "Diagnosis and Treatment of Carcinoma of the Rectum and Colon." A symposium on scarlet fever was presented before the society, March 2, by Drs. Ralph A. Fenton, Lendon Howard Smith and Adolph Weinzirl, Portland.——Dr. Blair Holcomb, Portland, addressed the Central Willamette Medical Society, Eugene, February 3, on "Practical Endocrinology with Special Reference to Management of Obesity."——At a meeting of the Coos and Curry Counties Medical Society in Marshfield February 2 the topic of round table discussion was hemolytic and nonhemolytic streptococcus infections.

Watch for Kidnaper Stevenson.—Oregon physicians are asked by the Federal Bureau of Investigation to watch for one Clarence Vernon Stevenson, wanted for the kidnaping of Mary McElroy of Kansas City, Mo., in 1933. It has been reported that Stevenson, who uses the names of Clarence Stevens, Clarence Stevenson, Henry F. Nelson and "Steve," has a heart ailment and it is believed that he will consult a physician. According to the notice sent out by the bureau, Stevens' disease is "thought to be leakage and enlargement of the heart." He has also suffered from rheumatism for years. Physicians consulted by Stevens or who have any information about him are asked to notify the headquarters of the Federal Bureau of Investigation in Portland, by telephone or telegraph, government rate collect. The telephone number is Atwater 6171, local 544. Stevens is aged 30 years, height 5 feet 7 inches, weight 145, medium slender build, chestnut hair, gray eyes, medium complexion, American, born in Butler, Mo.

PENNSYLVANIA

Society News.—Dr. Hugo Roesler, Philadelphia, addressed the Schuylkill County Medical Society at the Locust Mountain Hospital, Shenandoah, April 12, on "Errors in Diagnosis and Treatment of Cardiovascular Disease."——Dr. James R. Johnston, Pittsburgh, addressed the Washington County Medical Society, Washington, April 13 on "Office Gynecology."——Dr. Charles Mazer, Philadelphia, addressed the Northampton County Medical Society April 15 on "The Female Sex Hormones."

Committee on Psychiatric Service to Courts.—On the authority of a resolution adopted at the annual meeting of the Medical Society of the State of Pennsylvania last October Dr. Frederick J. Bishop, Scranton, president of the society, recently appointed a committee on psychiatric service. The resolution recommended establishment of psychiatric services to assist the criminal courts of the commonwealth in the disposition of criminal offenders, that adequate psychiatric service be established in all penal and correctional institutions in the state and that every prisoner convicted of a felony be examined psychiatrically before he is paroled or commuted. The committee, which was appointed to study ways of promoting these suggestions, consists of Drs. Daniel J. McCarthy, Philadelphia, chairman; Philip Q. Roche, Philadelphia; Howard K. Petry, Harrisburg; Horace V. Pike, Danville, and George J. Wright, Pittsburgh.

Philadelphia

Potter Lecture at Jefferson.—Dr. William Boyd, professor of pathology, University of Toronto Faculty of Medicine, delivered the William Potter Memorial Lecture at Jefferson Medical College April 18 on "Growth, Normal and Abnormal."

Memorial to Dr. Robinson.—The trustees of the Philadelphia Institute for Medical Research unveiled a memorial tablet to the late Dr. William Duffield Robinson April 7 at the institute's building at the Philadelphia General Hospital. Dr. Robinson, who died in 1931, was active in the formation of the institute. Dr. Charles A. E. Codman, president of the board of trustees, presided and addresses were made by Drs. Wilmer Krusen, Leonard G. Rowntree and John D. McLean.

Pediatric Pharmacy Week.—A committee of physicians and pharmacists is sponsoring the second annual "Pediatric Pharmacy Week" May 1-7. Pharmacists in Philadelphia and its vicinity are asked to use their window space during the week for displays designed to illustrate the importance of preventive medicine, particularly of modern immunologic procedures, in the reduction of disease and death among children. Dr. William N. Bradley and Ambrose Hunsberger, Ph.M., are chairmen of the committee. Physician members are Drs. Emily P. Bacon, Harvey Evert Kendig, Wilmer Krusen, Julian M. Lyon, Henry Harris Perlman and Ralph M. Tyson.

Society News.—Dr. James B. Collip, Montreal, addressed the Philadelphia Pediatric Society, April 12, on "Anterior Pituitary Hormones."——A special meeting on tuberculosis was held by the Philadelphia County Medical Society April 20 with the following speakers: Drs. Frank W. J. Burge on "Pneumoperitoneum, Oxyperitoneum and Nitroperitoneum in the Treatment of Pulmonary and Abdominal Tuberculosis"; William Devitt, Allenwood, Pa., "The New versus the Old in Tuberculosis Treatment," and Kendall Emerson, New York, "Five Points in the Tuberculosis Campaign."——Dr. Everett I. Evans, among others, addressed the Physiological Society of Philadelphia April 18 on "Diabetogenic Activity of the Anterior Pituitary."

Pittsburgh

Society News.—Dr. James H. Rankin Jr., among others, addressed the Pittsburgh Neuropsychiatric Society, March 21, at the Allegheny County Home and Hospital, Woodville, on "Metrazol Treatment of Schizophrenia."——Speakers at a meeting of the Pittsburgh Academy of Medicine April 12 were Drs. Charles F. Kutscher, on "Retinal Arteriolar Changes Significant of Hypertension"; Adolphus Koenig, "Photoelectric Cardiograms and Their Teaching Value," and Everett M. Baker, "Use of Peritoneal Drainage in Abdominal Operations."

SOUTH DAKOTA

State Medical Meeting at Huron.—The fifty-seventh annual session of the South Dakota State Medical Association will be held at the Marvin Hughitt Hotel, Huron, May 9-11. The morning sessions will be devoted to clinics conducted by guests. In the afternoons addresses will be presented by the following speakers:

Dr. Henry E. Michelson, Minneapolis, Dermatologic Diagnosis for the General Practitioner.
Dr. Charles Wilbur Rucker, Rochester, Minn., The Relation of Tears to Some Common Eye Diseases.
Dr. Walter A. Fansler, Minneapolis, Diagnosis and Office Treatment of Rectal Diseases.
Dr. Virgil S. Counseller, Rochester, The Uterus as a Surgical Problem in General Practice.
H. M. Sweeney, Ph.D., Vermilion, The Physiology of Hypertension.
Dr. Charles G. Sutherland, Rochester, Minn., The Value of the X-Rays in Diagnosis.
Dr. Henry F. Helmholz, Rochester, Recent Advances in the Treatment of Urinary Infections in Childhood.
Dr. Solon Marx White, Minneapolis, title to be announced.
Dr. Everett D. Plass, Iowa City, Obstetric Syphilis.
Dr. William W. Bauer, Chicago, The Doctor in Health Education.

The annual banquet will be held Tuesday evening May 10, with Dr. Bauer as the speaker on "Popular Beliefs That Are Not So." The South Dakota Academy of Ophthalmology and Otolaryngology will meet in the morning of May 10 with the following speakers: Drs. James D. Alway, Aberdeen, on "Foreign Proteins in Eye Therapy"; George M. Constans, Bismarck, N. D., "Management of Squint"; Laurence R. Boies, Minneapolis, "Modern Uses of Endoscopic Procedures," and Charles W. Rucker, Rochester, "The Visual Pathways."

TEXAS

State Medical Meeting in Galveston. — The seventy-second annual session of the Texas State Medical Association will be held in Galveston May 10-12, with headquarters at the Hotel Galvez. Dr. Calvin R. Hannah, Dallas, is president. Guest speakers who will address general sessions are:

Dr. John H. J. Upham, Columbus, Ohio, President of the American Medical Association, Modern Problems of Medical Practice.
Dr. Reed M. Nesbit, Ann Arbor, Mich., The Place of Transurethral Resection in Prostatic Surgery.
Dr. Wendell G. Scott, St. Louis, Diagnosis of Thoracic Diseases Other Than Tuberculosis.
Dr. Robert A. Strong, New Orleans, Preventive Pediatrics.
Dr. Edwin E. Osgood, Portland, Ore., Differential Diagnosis and Treatment of Anemias.
Dr. Waltman Walters, Rochester, Minn., Earlier Recognition of Intra-Abdominal Malignant Lesions.
Dr. Emil Novak, Baltimore, Cause and Treatment of Functional Uterine Bleeding.
Dr. John A. Kolmer, Philadelphia, Syphilis.
Dr. John J. Shea, Memphis, Tenn., Problems of the Deaf.
Dr. Arthur T. McCormack, Louisville, Ky., Whose Responsibility Is Public Health and Medical Service?

The guests will also address section meetings and several special combined section meetings, a new feature this year, as well as luncheon meetings. Dr. Ralph M. Waters, Madison, Wis., who will be the guest of the Texas Association of Medical Anesthetists, will address the section on surgery on "A Study of Morphine, Scopolamine and Atropine and Their Relation to Preoperative Medication and Pain Relief." Other special societies that will hold their annual meetings at this time are the Texas Railway Surgeons' Association, Texas Neurological Society, Texas Dermatological Society, Texas State Heart Association and the Conference of State and County Health Officers. The Woman's Auxiliary will hold its meeting at the Buccaneer Hotel.

VIRGINIA

Venereal Disease Control Officer. — Dr. Francis W. Upshur, Richmond, has been appointed to direct a program for the control of venereal disease in that city. The city council has appropriated $4,000 and the local chapter of the American Red Cross $2,000 to finance the work. Dr. Upshur, a graduate of the Medical College of Virginia, was at one time in charge of venereal disease wards in the U. S. Marine Hospital, Boston, and during the World War in charge of the division of venereal disease and diseases of the skin at the Norfolk Naval Hospital.

WASHINGTON

Plague Infection in Adams County.—According to *Public Health Reports,* plague infection has been proved in pools of fleas and lice collected from rodents in Adams County as follows: March 7 in a pool of 181 fleas from nineteen Citellus townsendii shot two miles east of Lind and in a pool of 103 lice collected from the same group of ground squirrels; March 9 in a pool of 179 fleas collected from twenty-seven Citellus townsendii, shot one mile southeast of Lind.

WEST VIRGINIA

Society News.—Drs. Randolph L. Anderson and Harry E. Baldock, Charleston, addressed the Logan County Medical Society, Logan, March 9 on "Chronic Arthritis" and "Meningococcus Meningitis" respectively.——Dr. Harry T. Schiefelbein, Welch, discussed otitis media at a meeting of the McDowell County Medical Society, Welch, March 9.——Dr. William B. Porter, Richmond, Va., addressed the Cabell County Medical Society, Huntington, March 10, on "The Heart and Physiologic Adjustments in Chronic Anemia."——At a meeting of the Central West Virginia Medical Society in Sutton March 19 the speakers were Drs. Theresa O. Snaith, Weston, on care and feeding of infants; John E. Cannaday, Charleston, diagnosis and treatment of malignant conditions of the large bowel, and Howard A. Swart, Charleston, new methods of treating fractures.——Dr. Louis H. Douglas, Baltimore, addressed the Eastern Panhandle Medical Society in Charles Town, March 9, on maternal mortality.——Drs. John Bankhead Banks and Pat A. Tuckwiller, Charleston, addressed the Greenbrier Valley Medical Society, Lewisburg, recently, on "Proctology: Diagnosis and Treatment of Certain Rectal Conditions of Sacral Anesthesia" and "Methods of Diagnosis and Treatment of Allergy" respectively.——Dr. Herbert H. Haynes, Clarksburg, addressed the Lewis County Medical Society, Weston, March 8, on carcinoma of the rectum.

GENERAL

Unauthorized Magazine Salesman. — The circulation department of *Newsweek* reports that a man named C. O. Reed, who is no longer an authorized representative of the magazine, is continuing to sell subscriptions, especially to physicians. He does not turn in either the money received or the subscriptions. The magazine announces that it will honor any receipts held by physicians on orders they have given to Reed and on which they have not received service if they will send in the receipts and statements of the amount of money paid to the salesman.

Tenth Pan American Sanitary Conference. — Surgeon General (Ret.) Hugh S. Cumming, director of the Pan American Sanitary Bureau, Washington, D. C., announces that the tenth Pan American Sanitary Conference will be held in Bogotá, Colombia, September 4-18. Subjects to be discussed include organization of a Pan American campaign against venereal disease, social security in its medical and public health aspects, control and prevention of yellow fever, recent achievements in the study of leprosy and the campaign against the disease, campaigns against tuberculosis, diseases produced by viruses and the problem of germ and virus carriers in epidemiology. The last previous conference was in Buenos Aires in 1934.

Guggenheim Fellowships Awarded. — The fourteenth series of annual fellowship awards of the John Simon Guggenheim Memorial Foundation includes the following:

Dr. Henry N. Harkins, instructor in surgery, University of Chicago, for a study of the causes and nature of traumatic shock.
Clyde E. Keeler, Sc.D., instructor in ophthalmic research, Harvard University Medical School, for collection of material for a book on genetics in relation to medicine.
Dr. Sydney William Britton, professor of physiology, University of Virginia Department of Medicine, Charlottesville, investigations of the function of the adrenal cortex and the kidney in primitive mammalian forms and in some of the primates.
Alfred George Marshak, Brookline, Mass., investigations of the nature of chromosome division, especially the nature of chromosome structure as revealed by response to treatment with x-rays and with neutrons.

The stipends are about $2,500 a year.

Report of Impostor.—A man who said he was Dr. A. B. Morris of Gainesville, Ga., recently appeared in Joplin, Mo., announcing that he planned to locate there, as his office and equipment had been destroyed by a storm. He also claimed to have had an automobile accident near Hot Springs National Park, Ark., where he had been in a hospital for some time. He then attempted to borrow money from Joplin citizens to last him until he received money from elsewhere. Inquiry directed to Gainesville and search of the American Medical Directory revealed no person of the name A. B. Morris. The state medical board of Georgia also reported that A. B. Morris was not licensed as a physician in Georgia. According to Joplin authorities, files of the Masonic order record a "Dr. Andrew W. Morris" of Gainesville, Texas, who attempted to obtain money in Syracuse, N. Y., in 1934. At that time he stated that he was a laboratory technician in the Eastman Kodak Company laboratories and showed a medical license from Indiana. He was said to be 70 years old. The man reported from Joplin appeared to be about 60 but intimated that he was 70 or older. He was 5 feet 6 inches tall, weighed about 165 pounds, was clean shaven, had black hair and carried a cane. He spoke English with an accent, German and Yiddish and claimed also to know French, Italian, Rumanian and Greek.

Congress of Physicians in Atlantic City.—The Congress of American Physicians and Surgeons, which meets every five years, will be held at Haddon Hall in Atlantic City May 3-4 under the presidency of Dr. James B. Herrick, Chicago. There will be two sessions of the congress, one Tuesday evening May 3, at which Dr. Herrick will deliver an address, and a scientific session Wednesday afternoon. Speakers at this meeting will be:

Drs. Willard B. Soper, New Haven, Conn., and James Burns Amberson Jr., New York, Pulmonary Tuberculosis Among Young Adults, Particularly Among Those Professionally Exposed to the Disease.
Dr. William C. Quinby, Boston, Urinary Stone: Some Present Day Concepts.
Dr. Tracy J. Putnam, Boston, Modern Forms of Treatment of Diseases of Nervous System.
Dr. Dallas B. Phemister, Chicago, Variation in the Cholesterol Pigment and Calcium Carbonate Content of Gallstones.

Meeting as a part of the congress will be several special societies, including the following:

The American Surgical Association will meet at the Traymore May 2-4. A feature of its program will be a symposium on treatment of infections presented by Drs. John S. Lockwood, Philadelphia; Champ Lyons and Richard H. Miller,

Boston; Alexander Randall and Patrick Boland Hughes, Philadelphia; Perrin H. Long and Eleanor A. Bliss, Sc.D., Baltimore.

The American Neurological Association will meet at the Ambassador May 2-4. Dr. Charles A. Elsberg, New York, president of the association, will give the Charles K. Mills Memorial Lecture Monday evening May 2 on "Cerebral Activity Including Conscious Sensation as a Physicochemical Process."

The Association of American Physicians will hold its fifty-third annual meeting at Chalfonte-Haddon Hall May 3-5.

The fourteenth annual meeting of the American Association of the History of Medicine at the Hotel Chalfonte, May 2, will commemorate the two hundredth anniversary of the death of Herman Boerhaave, "supreme clinician of the eighteenth century."

The sixtieth annual congress of the American Laryngological Association will be held at the Marlborough-Blenheim, May 2-4.

The American Association of Pathologists and Bacteriologists will convene for its thirty-eighth annual session at the Chalfonte-Haddon Hall May 3-4.

A symposium on display methods in medical museums will be a feature of the thirty-first annual meeting of the International Association of Medical Museums at the Chalfonte-Haddon Hall May 2. The American Association for Cancer Research will hold its thirty-first annual session at the Chalfonte-Haddon Hall May 2.

CANADA

Personal.—Dr. Seraphin Boucher has retired as director of the department of health of Montreal after twenty-five years' service. He has been succeeded by Dr. Adelard Groulx, Montreal.——Dr. Gregoire F. Amyot, Vancouver, assistant provincial health officer of British Columbia, has received leave of absence for two years to undertake an extensive survey of state health administration in association with Carl Buck, Dr.P.H., field director of the American Public Health Association.

University News.—Elmer V. McCollum, Ph.D., Baltimore, recently delivered the Gordon Bell Memorial Lecture at the University of Manitoba, Winnipeg, at a special convocation. The university conferred on Dr. McCollum the honorary degree of doctor of laws honoris causa.——High voltage x-ray therapy apparatus has been installed at the Winnipeg General Hospital in a new building especially constructed for this and the other x-ray equipment already in the hospital. The new equipment was made possible by a gift from Mr. John A. Forlong as a memorial to his wife.

CORRECTION

Nonoperative Management of Remaining Common Duct Stones.—In the paper with the foregoing title by Best and Hicken in THE JOURNAL, April 16, the authors desire to add to the legend of figure 1 that *A* represents the control period, *B* the period following administration of dehydrocholic acid by mouth for several days and *C* the period following the intravenous injection of 10 cc. of a 20 per cent solution of sodium dehydrocholate.

Government Services

Examination for the Army Medical Corps

The War Department has announced an examination for the purpose of qualifying candidates for appointment as first lieutenants in the Medical Corps, Regular Army, to fill vacancies occurring during the fiscal year 1939. The examination will be conducted July 18-22, both dates inclusive, by boards convened throughout the United States. It will consist of a physical examination, a written examination in professional subjects and a determination of the candidates' adaptability for military service. Licentiates of the National Board of Medical Examiners may be exempted from the written professional examination. The examination is open to all male graduates of acceptable medical schools who have completed one year's internship in an approved hospital and who will not be over 32 years of age at the time it will be possible to tender a commission. Full information and application blanks will be furnished on request addressed to the Adjutant General, War Department, Washington, D. C. Applications will not be considered after July 2.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 2, 1938.

A New System of Nerves

Sir Thomas Lewis has reported from the Clinical Research Unit of University College Hospital to the Medical Research Council observations on cutaneous hyperalgesia that have led to the discovery of a new system of nerves. It has been observed that a widespread and lasting area of hyperalgesia appears in many subjects around a point of faradic stimulation or tiny crush of the skin. It has been shown that this is independent of the central nervous system and arises out of changes in the region of the injury and through a local nerve mechanism. Impulses traveling through these local nerves set up a process in the surrounding skin of a relatively stable kind and one which is independent of the original injury. Similar hyperalgesia may be produced also by stimulating cutaneous nerve trunks; this effect appearing in the area of cutaneous distribution of the nerve is not prevented by previously blocking the nerve proximal to the point stimulated but is prevented by a block distal to the point. If the mucous membrane of the maxillary antrum is stimulated, hyperalgesia develops over the whole area supplied by the maxillary division of the fifth nerve, reproducing the superficial tenderness that often follows antral catarrh. By stimulating the digital nerve to the radial side of the little finger, similar hyperalgesia can be produced in the whole area of skin supplied by the ulnar nerve. All the instances of hyperalgesia described are produced through the same local nerves and the same effector mechanism. Evidence has been brought forward to show that the nerves concerned are arranged as arborizations of axons in the skin and that they belong neither to the sensory nor to the sympathetic system.

The newly discovered system of nerves has been named "nocifensor" because they appear to be specially concerned in local reactions of defense, exemplified by the hyperalgesia and probably also by the well known vascular flare which surrounds injuries of the skin. The observations illustrate how responses that are part and parcel of the inflammatory reaction may be set up distally in the skin through nerve channels. The effects of asphyxia and of cocaine on the hyperalgesic reaction confirm the view that the fibers concerned belong to a special system and not to the sensory system.

With Dr. Prochin Sir Thomas Lewis has completed a research on sensory response to painful stimuli. A needle prick or a transient application of heat awakens from the finger a double pain response. The first response travels in fibers of fast conduction and is readily obstructed by local asphyxia; the second travels in fibers of slow conduction and is readily obstructed by using cocaine. The interval between the two responses increases as the stimulus is moved peripherally and becomes large when a stimulus is applied to the toe. The delay of the second response is in the somatic nerves and not in the spinal cord. These observations fall into line with those previously made by Gasser, who showed that afferent impulses pass from the periphery in nerves of very different conduction rates. They are of particular interest in showing that pain impulses pass by both fast and slow conducting fibers. They are relevant to the delay of prick response in tabes dorsalis, and preliminary observation by Dr. Prochin suggest that, in this disease, slow conducting fibers are relatively unaffected.

Thrombosis of Peripheral Veins a Sign of Visceral Cancer

In the *Birmingham Medical Review* Dr. A. P. Thomson has called attention to a clinical fact first described by Trousseau in 1862 but almost completely overlooked in modern practice—

spontaneous thrombosis in both the upper and the lower limbs as a valuable sign in the diagnosis of visceral cancer. Trousseau pointed out its value in cases of cancer of the stomach not accessible to the usual methods of investigation. Dr. Thomson reports three cases: A healthy married woman, in the early forties, after a few weeks of ill health had thrombosis of a vein of the right leg. There was slight edema, which subsided under rest in bed, but almost immediately after she was allowed to get up she had a similar thrombosis in the other leg. A month later there was a similar thrombosis in the right thigh. Her general condition was good and physical examination was negative. As she had lost appetite and a little weight, an x-ray examination of the alimentary canal was made and was reported negative. Although there was no fever, Dr. Thomson suggested the possibility of thrombophlebitis migrans and search was made for foci of infection. Several teeth were condemned and removed, the tonsils were removed, and the sinuses were washed. A vaccine was prepared from the root of a tooth. But the patient continued to deteriorate and had several more attacks and one attack of pleurisy with hemoptysis, attributed to thrombosis of the pulmonary veins. Fourteen months after the original thrombosis she died with obvious evidence of malignant disease of the liver. The site of the primary cancer was never determined.

A man in the early fifties, admitted to the General Hospital, Birmingham, in 1936, was slightly anemic, had lost appetite for four months and had vague abdominal distress after meals. Before admission he had two attacks of thrombosis in the veins of the legs. X-ray examination showed a deformity of the cardiac end of the stomach. Further attacks of venous thrombosis occurred, and he died a few months later with evidence of metastases in the liver.

A man of 52, a total abstainer, who had never had any illness, began to complain of ill health. His appetite failed and he lost a few pounds. Later he had vague discomfort in the right iliac fossa and afterward in the right hypochondrium. X-ray examination was negative. In July, from six to eight weeks after he first consulted his doctor, he had a stab of pain in the right calf. There was a patch of phlebitis. August 26 he had pleurisy at the right base. Though physical examination was completely negative when he was seen a few days later by Dr. Thomson, visceral cancer was suggested in view of the spontaneous thrombosis and cachexia. Later another patch of phlebitis occurred, this time in the left leg. Physical examination was still negative, but frequent attacks of venous thrombosis of the leg followed. September 27 the liver was hard. Further attacks of thrombosis occurred and on October 25 laparotomy was performed and revealed carcinoma of the tail of the pancreas with metastases in the liver.

The pathology of the thrombosis remains obscure. Trousseau showed that it was not due to pressure. It does not seem to be due to infection, as in none of these cases was it associated with any fever. There was no evidence of implantation of malignant cells in the wall of the vein. Dr. Thomson suggests that the most probable cause is some chemical change in the blood following the development of cancer.

The Prevention of Explosions in Operating Rooms

The National Physical Laboratory has investigated the question of explosions in operating rooms through the accidental formation of electric sparks, which has been suggested as an explanation of some of these accidents. The laboratory has found that it may be possible by the movements of blankets and other objects to produce sparks capable of igniting anesthetic vapors. As a result of the investigation, recommendations have been made which should minimize the risk. These include the provision of earthing chains trailing from operating tables on to a semiconducting floor and the use of the partially conducting rubber which is now available.

The Protection of X-Ray and Radium Workers

To prevent injuries to x-ray and radium workers the British X-Ray and Radium Protection Committee was formed in 1921, as the result of cooperative action between the Royal Society of Medicine, the Röntgen Society, the British Association for the Advancement of Radiology and Physiotherapy, the Institute of Physics, the Radium Institute and the National Physical Laboratory. The committee has issued from time to time recommendations, of which the fifth has just been published. The problem of protection for x-ray workers has been eased by the introduction of the self-protected tube and more recently by the shock-proof tube equipment. The available evidence suggests that under satisfactory working conditions a person in normal health can tolerate with impunity exposure to x-rays and radium gamma rays of about one roentgen per week. The following protective measures are recommended:

WORKING HOURS AND OTHER CONDITIONS

Not more than seven working hours a day. Whole-time workers should not be called on for other hospital service. Not more than five working days a week, the off days to be spent as much as possible outdoors. Not less than four weeks holiday annually, preferably consecutive. No person to be employed whose blood or general health is unsatisfactory. The amount of radiation received by operators should be systematically checked to ensure that the tolerance dose is not exceeded. Before beginning work the normal leukocyte level should be found by making three total and differential counts in the afternoon. If no total count exceeds, 6,000 and no lymphocyte count reaches 1,200 the applicant should not be accepted. Periodic counts should be made every six months in the case of the x-ray worker and every three months in the case of the radium worker. If at any time a decided and sustained drop in total leukocyte or total lymphocyte count is found, work should be stopped and treatment undertaken.

GENERAL RECOMMENDATIONS

X-ray and radium departments should not be below the ground level. Damp rooms should be avoided. All rooms, including photographic dark rooms, should be provided with windows affording good lighting and ventilation. They should preferably be decorated in light colors. A working temperature of 18 to 21 C. (64.4 to 69.8 F.) is desirable in x-ray rooms, which should be large enough for convenient layout of equipment. X-ray generating apparatus employing mechanical rectifiers should preferably be in a separate room from the x-ray tube. An operator should on no account expose himself to direct x-ray beams (valve tubes used improperly may produce x-rays). The tube should be self protected or surrounded with protective material. In diagnostic work with other than completely protected tubes, the operator should be protected from stray radiation by a screen of minimum lead equivalent of 1 mm. All fluoroscopic examinations should be conducted as rapidly as possible with minimum intensities and apertures, and all couches and stands should be provided with arrangements for protecting the operator against scattered radiation from the patient. Protective gloves should have a value not less than 0.33⅓ mm. of lead and aprons of 0.5 mm. In treatment the operator should be outside the x-ray room behind a protective wall.

PROTECTION FROM RADIUM

To protect the hands, radium should be manipulated with long-handled forceps. All manipulations should be as rapid as possible. The radium safe should be as distant as possible from the personnel and provided with individually protected drawers. To protect the body from the gamma rays during handling, a screen of not less than 2.5 cm. of lead should be used. The risks in using large quantities of radium in beam therapy may be largely obviated by some system of remote control in which the radium is introduced into the container after the latter has been adjusted on the patient.

PARIS

(From Our Regular Correspondent)

April 2, 1938.

Protest Against Sale of Sulfanilamide Over the Counter

A letter to the editor of the *Siècle médical* by Prof. Jules Janet, an authority on gonorrhea, appears in the April 1 issue of that journal. The indiscriminate sale by druggists directly to patients of sulfanilamide and similar preparations ought to be stopped. Some experiences in his practice were cited by Professor Janet to show that these newer drugs should be employed only under medical supervision. He had prescribed from six to eight tablets each containing 0.5 Gm. (7½ grains) in nine cases. This was the dose recommended by the pharmaceutic houses. In these nine cases of gonorrhea he had observed a hematuria of renal origin, a generalized icterus and a multiple neuritis of the arm and thorax, the last named of three days' duration. Even when the dose was reduced to four tablets a day, a hematuria of renal origin was noted in the same patient who presented this symptom with the larger dose. The dose was then reduced to two tablets a day in three cases. One of the three patients, a young man with an anterior urethritis, had been given local treatment (permanganate irrigations) and two tablets of sulfanilamide (0.5 Gm.) daily. About thirty-six hours later he appeared pale and complained of a headache. The next day, the lips and nails were cyanotic. All these symptoms followed the use of only four tablets a day, or a total of 2 Gm. of the drug, and disappeared as soon as its use was discontinued.

Present Status of Chemotherapy of Gonorrhea

A meeting was held at the request of the minister of public health March 21 to evaluate the use of sulfanilamide and similar preparations in the treatment of gonorrhea. A report of this meeting by Prof. Constantin Levaditi of the Institut Pasteur appeared in the April 1 issue of the *Siècle médical*. The most prominent venereologists of France took part in the discussion. The hope of a specific remedy to combat gonorrhea has not been fulfilled. The risk of serious complications following the use of the newer preparations is not to be overlooked. To have an effect on the gonococcus, the drugs must be given in such large doses as to risk the occurrence of serious systemic complications. The result is that, in order to avoid such sequels, the drugs must be given in such relatively small doses as to lose all their action on the gonococcus in the majority of cases. Most of those who took part in the discussion were of the opinion that, confronted with the alternative of giving sufficiently large doses to have an actual effect on the gonococcus or to fall back on the older methods of local treatment, the latter would still remain the method of choice. Chemotherapy must be regarded as of value when associated with local treatment but should not be depended on as the sole method. As such an adjuvant treatment, the newer preparations were of especial value in gonorrhea in the female and in epididymitis, provided the drugs were given in not too large doses and only under constant medical supervision. No matter which of the newer specific drugs were used, there had been a recurrence in 30 per cent of the cases.

To avoid the use of these newer drugs without daily medical supervision, it was the sentiment of the meeting that they should be placed in the narcotics list; i. e., to be sold by druggists only when prescribed by physicians.

Agranulocytosis During Attack of Cholecystitis

A case of agranulocytosis during an attack of cholecystitis was reported by Dr. Pasteur Vallery-Radot and his associates at the January 28 meeting of the Société médicale des hôpitaux. A woman aged 26 was admitted May 2, 1935, because of a severe ulceromembranous pharyngitis. Smears revealed the presence of numerous spirilla, and only staphylococci were found in cultures. There was marked tenderness over the gallbladder region. The blood examination showed 2,000 leukocytes per cubic millimeter associated with absence of polymorphonuclear leukocytes. There was a history of recurrent attacks of cholecystitis. The temperature was 104 F. and the patient appeared extremely ill. The number of leukocytes dropped to 1,200 per cubic millimeter and rose to nearly 12,000 with 68 per cent polymorphonuclears only when the membranes in the buccopharyngeal region began to disappear, about two weeks after admission to the hospital. Similar cases of agranulocytosis during an attack of cholecystitis have been reported by Peritz and also by Sabrazes and his associates.

"Atrophy" of Liver Following Injection of Antitetanus Serum

At the January 28 meeting of the Société médicale des hôpitaux Dr. Jacques Caroli reported a case of severe icterus and acute hepatic atrophy following prophylactic injection of 10 cc. of antitetanus serum, ten days before admission to the hospital. The chief prodromal symptom was an intense headache, which receded as soon as the icterus became manifest. The icterus, which at first gave the impression of being of a mild catarrhal type, was accompanied on the eighth day by bleeding from the gums, severe epigastric pain and diarrhea. The coagulation time was twenty-one minutes, but the bleeding time was normal. The stools contained blood and traces of bilirubin. Cholecystostomy was followed by a marked improvement of the clinical picture. Biopsy specimens of the liver tissue taken at the time of operation revealed a condition which the author terms "acute gray atrophy." The parenchyma failed to show any trace of bile pigments and red blood cells, a condition which could be best explained as being the result of anaphylactic edema complicated by necrosis of the central portion of the lobules.

Basal Metabolism in Children with Goiter

A careful investigation on the basal metabolism in children with goiter was presented in a paper by Drs. Mouriquand and Enselme at the March 15 meeting of the Académie de médecine. In fifty children with goiter, of whom forty-three were girls, the metabolism was normal in seventeen, increased in twenty and decreased in thirteen. Of those showing increased metabolism, five had a basal metabolism of less than plus 10, probably of emotional origin, and nine of less than plus 20, which might be ascribed to hypersympathicotonia. In six children the metabolism rate varied from plus 21 to plus 70. In thirteen of the fifty children there was a lowered rate varying from minus 10 to minus 30. These children presented the classic signs of hypothyroidism in the form of pallor, retarded intellect and puffiness of the face.

BERLIN

(From Our Regular Correspondent)

March 7, 1938.

Mortality in the Berlin Hospitals

Dr. Conti, Berlin municipal medical counselor, in the *Aerzteblatt für Berlin* has pointed out that the number of deaths in Berlin's municipal hospitals is disproportionately great. Investigation has proved that doctors are hospitalizing a mounting number of incurably ill patients. This trend may be explained in part as due to the aging of the population, to bad living conditions and to the fact that, since the abolition of unemployment, a sick person's relatives have no time to take care of him. Moreover, it cannot be denied that hospitalization may be a means of evading personal responsibility; in fact, this motivation is often obvious. This trend exerts a deleterious influence on all hospital patients, and the expenses entailed by the care of so many hopeless cases makes hospitalization more costly for patients whose prospects for cure are favorable. Dr. Conti feels that a practitioner, whenever

possible, should keep the patient at home if no favorable result is to be expected from hospitalization.

Tuberculosis in the Schools

Tuberculosis in the schools was recently the subject of an article by Dr. Denker and Dr. Seifert in the *Reichs-Gesunheitsblatt*. Legislation designed to mitigate the danger of infection among teachers and pupils has been enacted in Germany. By the terms of one such ordinance a teacher or pupil afflicted with infectious tuberculosis is forbidden to enter a schoolroom. Since 1934 a special law has been in force in Prussia, by the terms of which all cases of tuberculosis, fatal or otherwise, must be reported to the authorities. This applies to the disease in all its forms. Even a well founded suspicion that a person is afflicted with tuberculosis of the skin should be communicated to health officials. All persons preparing themselves for teaching, candidates for teaching positions and young teachers must submit an official medical certificate of good health wherein the condition of the lungs must have been verified by a roentgen examination. Legislation subsequently enacted contains provisions for special observation of tuberculous children.

Control of tuberculosis is an official duty of public health officers, particularly the detection of cases. Group examinations have become a part of the school medical service. The search for tuberculosis in school children is carried on with the aid of the tuberculin test. If a certain class has an exceptionally high incidence of positive reactions it is assumed that a source of infection exists within the class, and both pupils and teacher are submitted to roentgen examination. Children with positive tuberculin reactions have tended to decrease in number in the course of the years. Pirquet in his time elicited positive reactions in about 100 per cent of school children in Vienna. Today the proportion is 40 per cent or less. Now if more than 40 per cent of the children in a certain class show positive reactions the teacher probably is actively tuberculous. Children whose reactions are positive are next thoroughly examined clinically to ascertain whether active tuberculosis is present. The National Antituberculosis Commission has formulated the following classifications of conditions presented by children whose tuberculin reactions are positive: (1) infectious tuberculosis requiring treatment, (2) noninfectious tuberculosis requiring treatment, (3) tuberculosis requiring observation, (4) inactive tuberculosis, observation not required. Observation has taught that mortality from tuberculosis is higher among children who previously have exhibited positive reactions to the tuberculin test than among children whose reactions were previously negative.

A Study of Spermatozoa

Stiasy and Generales of Berlin contributed to the annual convention of the German Genetic Society a study of the spermatozoa in healthy and in congenitally diseased men. The principal observation was the lack of uniform spermatozoa. The ratio of normal to modified spermatozoa varies, the average ratio being 81:19 in a healthy, procreative man and 37.15:62.85 in a man with hereditary disease. Among schizophrenic men, for example, the ratio is 46.2:53.8, among congenitally feebleminded men 38.2:61.8, among chronic alcohol addicts 24.9:75.1. According to this report, which will require further verification, two questions remain unanswered: To what degree is the spermatozoal picture influenced by the actual genotype? and Is there any correspondence between the spermatozoal picture and particular hereditary diseases?

The Behavior of Mandelic Acid

Prof. F. Wrede, physiologic chemist of Kiel, has investigated the behavior of mandelic acid within the human and animal organisms. Wrede observed that only about 70 per cent of racemic mandelic acid was eliminated in the urine. Recalling the work done by O. Neubauer, H. Fischer, Dudley and Dakin, Wrede sought to determine whether benzoyl-formic acid is capable of producing mandelic acid while in transit through the organism. No racemic mandelic acid could be detected in the urine of human subjects or of dogs which had ingested benzoyl-formic acid. It is obvious, however, that man and dog react differently to this substance.

Wrede's observations are at variance with those of O. Neubauer, who on the basis of analytic studies of phenylaminoacetic acid had established two cardinal principles, that of oxidative deamination and that of optically active reduction. A more critical attitude must now be brought to bear on these principles.

Tuberculosis in Germany

The mortality from tuberculosis in Germany is gradually decreasing. Figures recently issued by the National Health Bureau show that the rate from 1892 to 1894 was still 25.8 deaths of tuberculosis per 10,000 of population; in 1934 the corresponding rate was only 7.2. Complete figures are not yet available for 1935. Variations in the mortality from tuberculosis in urban as contrasted with rural regions are not great. The incidence of tuberculous meningitis, a disease of childhood, is influenced by the size of the child population of a certain region. The larger cities belong among the communities reporting higher mortality from tuberculosis of the respiratory system. This is due in part to the migration of large numbers of persons of the intermediate age groups to the cities. In 1934 the mortality from tuberculosis in cities of more than 100,000 was 7.2 per 10,000 of population; in smaller communities the rate was generally less, dwindling to a minimal 6.0 in towns of 15,000 population. The average rate for all these urban communities was 6.9. No corresponding statistics are available for the distinctly rural regions. Since, however, the mortality from tuberculosis in the entire reich was 7.2 per 10,000 of population, namely, greater than the average of all urban communities, it may be inferred that the mortality is higher in the rural than in the urban communities.

The mortality from tuberculosis is higher among the male than among the female population. In 1934 the rate for the male sex was 7.8, for the female sex 6.6 per 10,000. The male death rate was thus 118 per cent that of the female. This excessive male susceptibility to fatal tuberculosis was not present at all age levels. Between the ages of 5 and 30 years the death rate was greater among females than among males. Whereas the mortality of male nurslings was 123 per cent that of female nurslings, among persons between the ages of 15 and 30 the male mortality from tuberculosis was only 83 per cent of the female mortality. For men of the age group 30-45, however, the death rate was 129 per cent that of women in the same group. Among persons between the ages of 45 and 60, nearly twice as many men as women died of tuberculosis. The highest male mortality from the disease was among men from 60 to 70 (12.5 per 10,000); the highest corresponding female rate was in young women aged from 15 to 30 (9.0 per 10,000). Nearly 40 per cent of deaths of women in the latter age group were caused by tuberculosis.

Tularemia in Germany

According to a report issued by the National Health Bureau the first investigations of tularemia among game animals was undertaken during the hunting season of 1930-1931. Simultaneously investigations were begun to discover possible unrecognized cases in man. In March 1931 a case of tularemia was reported in an employee of an institute of venery who apparently had become infected in 1928 while dissecting game animals. This case and a second, subsequently reported, were both of the ulceroglandular type, which is acquired only by direct contact with diseased animals. The first case (1936) of tularemia in which the diagnosis was confirmed by culture of the causative agent was of the oculoglandular type; the contagion had been transmitted by insects. Occult enzootic foci of contagion seem to be present in small game but autogenous tularemia among

domesticated hares, rabbits and so on was not observed. In the German reich at present tularemia is not serious, but this condition could be quickly changed by the spread of contagion from nearby Austria and Czechoslovakia. Studies made in collaboration with the Swedish Institute of Bacteriology at Stockholm have demonstrated that the serobacteriologic identity of the pathogenic organisms may be differentiated on the basis of geographic origin, as American, Swedish, Turkish, Czech or German. In Germany only a few cases of tularemia have been observed. In view of the infectiousness, the same regulations which govern bubonic plague research have been made applicable to tularemia research in German laboratories. To prevent entrance of tularemia from abroad, the importation into or transit through the reich of both living and dead hares and rabbits was prohibited if the animals came from Czechoslovakia, Austria, Hungary, Yugoslavia, Rumania, Bulgaria, Albania, Greece or Turkey. But after geographic distribution of the contagion became better known the ban was modified. It now applies only to Czechoslovakia, Turkey and Austria, as tularemia was rife in these countries during 1936-1937.

AUSTRALIA

(From Our Regular Correspondent)

March 15, 1938.

Medical Research Council

The third session of the National Health and Medical Research Council was held in Sydney last November.

MEDICAL RESEARCH IN AUSTRALIA

The medical research endowment act, passed by the commonwealth government in July 1937, implements the recommendations of the Council for an annual endowment of medical research and, as a first contribution, the sum of £30,000 has been placed on the estimates for 1937. The Medical Research Council has granted assistance to university departments and such institutions as the Walter and Eliza Hall, the Kanematsu and Kolling institutes, and also to some ten young research workers who propose to open up new fields of work, and has made possible the initiation of concerted schemes of research on an organized and extensive scale, into the subjects of puerperal morbidity, streptococci, poliomyelitis, rheumatism and tuberculosis. In addition, a whole field of dental research will be explored and constructive work established. The council considered that it would be necessary to have the assistance of special committees, expert and representative in constitution, with reference to various aspects of the research scheme that has now been initiated. Four such committees were appointed with special reference to tropical physiology and hygiene, dental research, obstetric research and tuberculosis.

POLIOMYELITIS

Close attention was given to the present situation resulting from the epidemic of poliomyelitis in Victoria, and the public apprehension which has been caused not only in Victoria but in other states. The council reviewed epidemiologic aspects of the disease, and the administrative control, and made certain recommendations concerning research. The council recommended the expenditure up to £4,000 for investigation into certain streptococci which have been found consistently in the throats of patients with poliomyelitis during this epidemic, and also for certain serologic investigations which will require expensive monkey experiments.

Treatment of Lepers in Australia

Criticism of the treatment of lepers in Australia was voiced recently by Dr. E. H. Molesworth, lecturer on skin diseases at Sydney University, a member of the International Leprosy Association and author of many publications on leprosy and other diseases. He declares that in Australia the attitude toward leprosy is medieval. The locking up of white lepers to make virtual prisoners of them is futile and has no justification. He advocates the abolition of segregation and the granting to the leper a freedom of movement among his fellows. Lepers should be treated as individuals with the right to live in their own homes and the right to have hospital treatment like any other sick persons. He says that so long as the affected person has his own room and keeps away from children (who have greater susceptibility to the disease) there is not the slightest risk of infection. The public, while exposing itself to infection with tuberculosis and other dangerous diseases, still adopts a primitive attitude toward leprosy, with which the danger of infection is slight. In European cities, lepers are not segregated but are allowed complete freedom. There are a number of free lepers receiving treatment in London, and more than 150 living in Paris. In the whole of Australia the number of white lepers is about sixty. Dr. Molesworth said that the greatest danger of segregation was that if a person discovered that he had contracted leprosy he immediately did his best to conceal the fact, because if he reported to the authorities he would be taken immediately to a lazaretto, there to live as a prisoner, forgotten by the world. The result was that most of the cases reported were far advanced. In such advanced cases treatment cannot be expected to give very beneficial results.

University Criticized

Prof. F. Wood Jones, who is retiring from the chair of anatomy at the Melbourne University to take an appointment in England, delivered some trenchant criticism of university affairs in a valedictory lecture at the Melbourne Town Hall. Professor Wood Jones said that the real university is one that prepares for intellectual life all those who are sufficiently intelligent to comprehend its meaning. Ostensibly Melbourne University was founded to be the "nursery of great men, of those on whom, whatever be our form of government, our true permanent welfare depends." But since the establishment of the Melbourne University sectarian influences have been at work for the foundation of residential colleges. In permitting sectarian religion to be recognized at all within the university, Melbourne has handicapped itself in its attempt to cater for the intellectual life of the community. Certainly it would have been difficult to raise financial assistance from nonsectarian sources, but, once admitted, sectarian influences are extremely difficult to eradicate and are one of the most serious defects in the intellectual life of Australia. Professor Wood Jones said that the possibilities of free and stimulating discussion between teacher and student were practically nonexistent in most of the faculties of Melbourne University. Australia should aim at securing men of character and ability to fill university posts, and when they were secured there should be a much greater freedom of intercourse between staff and students than could prevail under the present conditions of understaffing. A university should be regarded as providing a mental clinic for young people rather than as a machine which enabled them, in a mechanical way, to earn a living.

Marriages

MORTIMER D. BURGER to Miss Lillian Katherine Solomon, both of Mount Vernon, N. Y., January 16.

GLENN DE VERE CARLSON to Miss Lorraine Frances Manske, both of Dallas, Texas, Dec. 6, 1937.

WILLIAM BENJAMIN DAVIS, College Park, Ga., to Miss Sara Astin of Palmetto in February.

HENRY Y. HARPER to Miss Sara Eliza Vandiver, both of Anderson, S. C., February 19.

MAX K. HIRSCHFELDER, Chicago, to Miss Edith Hirsch of Winnetka, Ill., in February.

JOSEPH A. MACK, Canton, Ohio, to Miss Una Sanders of North Canton, February 14.

FRANKLIN M. KRICHBAUM to Miss Jane Smith, both of Akron, Ohio, March 6.

Deaths

Charles O. Day ✠ Boston; Harvard University Medical School, Boston, 1907; member of the New England Otological and Laryngological Society; fellow of the American College of Surgeons; consulting surgeon to the Boston Eye and Ear Infirmary, the Boston Lying-in Hospital and the Florence Crittenton Home and Hospital, Boston, and the Brooks Hospital, Brookline; aged 58; died, February 23, in the Baker Memorial Massachusetts General Hospital of pneumonia.

Daniel A. MacLachlan, Detroit; University of Michigan Homeopathic Medical School, Ann Arbor, 1879; fellow of the American College of Surgeons; professor of ophthalmology and otology at his alma mater, 1889-1895; dean and professor of ophthalmology and otology, Detroit Homeopathic College, 1889-1912; formerly member of the state board of medical examiners; on the staff of the Grace Hospital; aged 85; died, February 8, at Dunedin, Fla., of cardiovascular disease.

Charles Arthur Wallbillich, New Orleans; Tulane University of Louisiana Medical Department, New Orleans, 1905; fellow of the American College of Surgeons; member of the Louisiana State Medical Society; at one time professor of clinical gynecology and obstetrics at the Tulane University Graduate School of Medicine; on the staff of the Charity Hospital; aged 57; died, February 10, of cerebral hemorrhage.

James L. B. Gilmore, Holly Hill, S. C.; Medical College of the State of South Carolina, Charleston, 1881; member of the South Carolina Medical Association; past president of the Orangeburg County Medical Society; also a pharmacist; for many years postmaster of Holly Hill and trustee of the schools; aged 79; died, February 19, in the Tri-County Hospital, Orangeburg, of carcinoma of the prostate.

John Vincent Littig ✠ Major, U. S. Army, retired, Boston; Rush Medical College, Chicago, 1901; fellow of the American College of Surgeons; served during the World War; was appointed a major in the medical corps in 1920 and retired in 1932 for disability in line of duty; aged 61; died, February 2, in the Walter Reed General Hospital, Washington, D. C.

Lee Chamberlain Stillings, Bellows Falls, Vt.; University of Vermont College of Medicine, Burlington, 1893; member of the Vermont State Medical Society; past president of the Windham County Medical Society; served during the World War; on the staff of the Rockingham General Hospital; aged 68; died, February 21, in Knoxville, Tenn., of pneumonia.

Guy Forsyth Cleghorn, Mineola, N. Y.; Albany (N. Y.) Medical College, 1904; member of the Medical Society of the State of New York; past president of the Nassau County Medical Society; on the staff of the Nassau Hospital; health officer; for many years county jail physician; aged 59; died, February 6, of cerebral thrombosis and hypertension.

Cornelius John Carr, Buffalo; Niagara University Medical Department, Buffalo, 1896; member of the Medical Society of the State of New York; on the staffs of the Emergency Hospital, St. Mary's Infant Asylum and Maternity Hospital and the Millard Fillmore Hospital; aged 70; died, February 12, of cerebral hemorrhage and arteriosclerosis.

Frederick Sefton, Auburn, N. Y.; Yale College Medical Department, New Haven, 1884; member of the Medical Society of the State of New York and the American Psychiatric Association; bank president; formerly member of the board of education; on the staff of the Auburn City Hospital; aged 78; died, February 3, of arteriosclerosis.

Howard Coleman Scott, Sweetwater, Texas; University of Tennessee Medical Department, Nashville, 1900; member of the Tennessee State Medical Association; past president of the Nolan-Fisher Counties Medical Society; aged 76; on the staff of the Sweetwater Hospital, where he died, February 11, of complications following burns.

Richard A. Poole, Indianapolis; Medical College of Indiana, Indianapolis, 1905; member of the Indiana State Medical Association; at one time county coroner; formerly superintendent of the City Hospital; aged 58; died, February 24, in St. Vincent's Hospital of uremia as the result of an injury received in a fall five years previously.

Joseph E. Moser ✠ Bloomington, Ind.; State College of Physicians and Surgeons, Indianapolis, 1907; served during the World War; past president of the Monroe County Medical Society; at one time secretary of the county board of health; on the staff of the Bloomington Hospital; aged 58; died, February 1, of heart disease.

John Nicholas Ryan ✠ Passaic, N. J.; Long Island College Hospital, Brooklyn, 1899; served during the World War; at one time member of the board of education; city health officer; superintendent of the Passaic Municipal Hospital; aged 61; on the staff of St. Mary's Hospital, where he died, February 10, of duodenal ulcer.

Lawrence Svante Bernhard Lundwall, Gardner, Mass.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; member of the Massachusetts Medical Society; formerly city physician; on the staff of the Henry Heywood Memorial Hospital; aged 61; died, February 11.

Edward Treen Hare, Holyoke, Mass.; University of Vermont College of Medicine, Burlington, 1929; member of the Massachusetts Medical Society; aged 35; on the staffs of the Shriners' Hospital for Crippled Children and the Wesson Memorial Hospital, Springfield, where he died, February 17, of spinal meningitis.

Robert Dayton Luster ✠ Granite City, Ill.; St. Louis University School of Medicine, 1903; past president of the Madison County Medical Society; served during the World War; formerly member of the state board of health; aged 58; on the staff of St. Elizabeth's Hospital, where he died, February 13, of ileitis.

James Martin Miller ✠ Major, M. C., U. S. Army, Ancon, Canal Zone; University of Pennsylvania Department of Medicine, Philadelphia, 1917; served during the World War; entered the medical corps of the U. S. Army in 1920 and was promoted to major in 1930; aged 47; died February 21, in the Gorgas Hospital.

Elmer E. Morrison ✠ Great Bend, Kan.; Barnes Medical College, St. Louis, 1896; past president of the Barton County Medical Society; fellow of the American College of Surgeons; for many years member of the school board; aged 69; on the staff of St. Rose Hospital, where he died, January 18.

Zachary Amerigo Mollica ✠ Belmont, Mass.; Medical College of the State of South Carolina, Charleston, 1912; superintendent of the Harley Private Hospital; served during the World War; aged 49; died, February 1, of coronary thrombosis while at sea aboard the S. S. *New York*.

George Stillman Loveren ✠ Santa Barbara, Calif.; Jefferson Medical College of Philadelphia, 1907; fellow of the American College of Surgeons; on the staffs of the Santa Barbara General, Santa Barbara Cottage and St. Francis hospitals; aged 53; died, February 3, of cerebral thrombosis.

Irving Lee Walker, Cold Water, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1900; at various times on the staffs of the Binghamton (N. Y.) Hospital, Central Islip (N. Y.) Hospital and the Rochester (N. Y.) State Hospital; aged 65; died, February 18.

Howard Arthur Bassett, Lowville, N. Y.; College of Physicians and Surgeons, Boston, 1905; member of the Medical Society of the State of New York; served during the World War; aged 62; died, February 12, of coronary thrombosis, diabetes mellitus and cirrhosis of the liver.

Edgar J. March ✠ Canton, Ohio; College of Physicians and Surgeons, Baltimore, 1884; member of the House of Delegates of the American Medical Association, 1911, 1912; for many years president of the staff of the Aultman Hospital; aged 80; died, February 20, of coronary thrombosis.

Thomas Sheridan McCabe, Newark, N. J.; College of Physicians and Surgeons, Baltimore, 1902; member of the Medical Society of New Jersey; served during the World War; on the staff of St. James Hospital; aged 61; died, February 26, of coronary thrombosis and nephritis.

Charles McKinley, Strong, Kan.; University of Kansas School of Medicine, Kansas City, 1906; mayor; member of the school board; at one time physician at the state penitentiary, Lansing; aged 64; died, February 15, in St. Mary's Hospital, Emporia, of carcinoma of the liver.

John Norton Thorpe ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; served during the World War; aged 61; on the staff of the Evangelical Hospital, where he died, February 8, of carcinoma of the stomach.

Levi Brimner Salmans, Guanajuato, Mexico; Kentucky School of Medicine, Louisville, 1891; a retired medical missionary; formerly superintendent of the Good Samaritan Hospital; aged 82; died, January 29, in the Huntington Memorial Hospital, Pasadena, Calif.

William Edwin Bradley ✠ Estherville, Iowa; Rush Medical College, Chicago, 1892; past president and secretary of

the Emmet County Medical Society; on the staff of the Coleman Hospital; aged 72; died, February 12, of cirrhosis of the liver and lymphoma.

Hiram Roscoe Gilliam, Houston, Texas; University of Louisville (Ky.) Medical Department, 1909; member of the State Medical Association of Texas; aged 65; died, February 11, in the Memorial Hospital, of pyloric stenosis, duodenal ulcer and pneumonia.

Robert Woods Colville, Mount Vernon, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1882; past president of the Knox County Medical Society; formerly member of the local board of education; aged 86; died, February 5.

Dwight Addison Mathes ⊕ Jefferson, Iowa; University of Kansas School of Medicine, Kansas City, 1931; formerly associate in general surgery at the State University of Iowa College of Medicine; aged 35; died suddenly, February 10, of heart disease.

William Sparks McElrath, Cedar Bluff, Ala.; Memphis (Tenn.) Hospital Medical College, 1900; member of the Medical Association of the State of Alabama; served during the World War; aged 62; died, February 2, of diabetes mellitus.

Henry A. Hart, Memphis, Tenn.; National University of Arts and Sciences Medical Department, St. Louis, 1912; member of the Tennessee State Medical Association; aged 54; died, February 21, in St. Joseph's Hospital, of hypernephroma.

Isaias Joseph Altwer, New York; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1891; aged 73; died, February 11, in Monticello, N. Y., when he severed his jugular vein with a scalpel.

Joseph Peter Hanlon, Hudson, Mass.; Baltimore Medical College, 1903; member of the Massachusetts Medical Society; for many years school physician; aged 64; died, February 4, in Lakeville, of tuberculosis of the larynx and lungs.

William Porter Hughes, Russellville, Ala.; Kentucky School of Medicine, Louisville, 1896; member of the Medical Association of the State of Alabama; aged 69; died, February 14, at Florence, of heart disease and arteriosclerosis.

Conrad Favaro, West New York, N. J.; Georgetown University School of Medicine, Washington, D. C., 1927; aged 35; died, February 14, in the Hospital for Joint Diseases, New York, of streptococcic meningitis and multiple sclerosis.

Hagop B. Asadoorian, Pasadena, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1888; at one time coroner in Carbon County, Utah; aged 76; died, February 8, of coronary thrombosis.

Benjamin P. Andrews, Dansville, N. Y.; New York Homeopathic Medical College, New York, 1877; member of the Medical Society of the State of New York; aged 81; died, February 7, of coronary thrombosis.

Glenn Washington Briggs, Walthill, Neb.; John A. Creighton Medical College, Omaha, 1914; member of the Nebraska State Medical Association; aged 47; was found dead, February 4, of pulmonary embolism.

George H. Kister, Evansville, Ind.; University of Louisville (Ky.) Medical Department, 1897; aged 67; died, February 1, in the Methodist Episcopal Hospital, Princeton, of injuries received in an automobile accident.

Charles Alexander Jordan, Cragford, Ala.; Southern Medical College, Atlanta, Ga., 1884; member of the Medical Association of the State of Alabama; aged 78; died, February 6, in Roanoke, of cardiorenal disease.

Edward Calvin Bechtol, Montgomery, Mich.; Michigan College of Medicine and Surgery, Detroit, 1896; aged 63; died, February 22, in the Cameron Hospital, Angola, Ind., of cholelithiasis and cirrhosis of the liver.

Samuel F. King, El Paso, Texas; University of Louisville (Ky.) Medical Department, 1884; member of the State Medical Association of Texas; aged 75; died, February 6, of carcinoma of the prostate, liver and lungs.

Stephen Madison McCaskill, Camden, S. C.; Medical College of the State of South Carolina, Charleston, 1910; member of the South Carolina Medical Association; aged 66; died, February 2, of chronic myelitis.

Fleming James O'Connor, Little Rock, Ark.; Tulane University of Louisiana Medical Department, New Orleans, 1909; served during the World War; aged 53; died, February 3, of coronary thrombosis.

Allen D. McReynolds ⊕ Stamford, Texas; St. Louis College of Physicians and Surgeons, 1898; past president of the Jones County Medical Society; aged 62; died, January 13, of coronary thrombosis.

James Hugh Brodie Allan, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1885; L.R.C.P., London, England, 1885 and M.R.C.S., England, 1887; aged 75; died, January 26.

Henry T. Norrgard, Milaca, Minn.; University of Minnesota Medical School, Minneapolis, 1921; member of the Minnesota State Medical Association; aged 49; died, February 11, of coronary thrombosis.

Charles Tilghman Kemmerer, Davenport, Iowa; State University of Iowa College of Medicine, Iowa City, 1878; aged 86; died, February 21, in Miami, Fla., of hypostatic pneumonia and arteriosclerosis.

William D. Richardson, Centralia, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; member of the Illinois State Medical Society; aged 86; died suddenly, February 7, of coronary occlusion.

Thomas Young Kimball, Manton, Mich.; Grand Rapids (Mich.) Medical College, 1899; aged 63; died, February 1, in the Charles Godwin Jennings Hospital, Detroit, of hemorrhage into the cerebrum.

John James Stephens, Springfield, Ark.; Vanderbilt University School of Medicine, Nashville, Tenn., 1886; aged 72; died, February 24, in a hospital at Little Rock, of bronchopneumonia.

Timothy Joseph Reardon ⊕ Boston; Harvard University Medical School, Boston, 1894; member of the New England Otological and Laryngological Society; aged 65; died, February 17.

Robert Henry Shaw, Lyndon, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; aged 60; died, January 3, of pulmonary hemorrhage.

Arthur James Oliver ⊕ Muscatine, Iowa; Rush Medical College, Chicago, 1896; on the staff of the Benjamin Hershey Memorial Hospital; aged 67; died, February 19, of arteriosclerosis.

Eugene J. Johnson, Memphis, Tenn.; Memphis Hospital Medical College, 1897; on the staff of the Methodist Hospital; aged 62; died, February 18, in the Baptist Hospital of pneumonia.

Alexander Hugh Macdonald, New York; Columbia University College of Physicians and Surgeons, New York, 1924; aged 39; died, January 5, in Hartford, Conn., of bronchopneumonia.

John Samuel Hick Leard ⊕ Boston; University of Pennsylvania Department of Medicine, Philadelphia, 1894; formerly on the staff of the Faulkner Hospital; aged 71; died, February 3.

Edward C. English, Rensselaer, Ind.; Rush Medical College, Chicago, 1895; member of the school board; at one time county health officer; aged 77; died in February of pneumonia.

Russell Viley Rice, Louisville, Ky.; Howard University College of Medicine, Washington, D. C., 1925; aged 38; died, January 2, in the Red Cross Hospital, of nephritis and uremia.

Isaac B. Nofsinger, Elgin, Texas; Kentucky School of Medicine, Louisville, 1891; member of the State Medical Association of Texas; aged 73; died, February 13, of angina pectoris.

Charles F. Burkhalter ⊕ Higbee, Mo.; Washington University School of Medicine, St. Louis, 1895; aged 70; died, February 10, in the Woodland Hospital, Moberly, of pneumonia.

Frederic Edward Rainville, Jewett City, Conn.; University of Vermont College of Medicine, Burlington, 1891; aged 76; died, January 24, of arteriosclerosis and heart disease.

John Roseman Marshall ⊕ Union, Mo.; St. Louis University School of Medicine, 1930; aged 37; died, February 12, in the Firmin Desloge Hospital, St. Louis, of septicemia.

S. E. Cummings, Ravia, Okla.; St. Louis College of Physicians and Surgeons, 1905; aged 69; died, February 10, in Ardmore, of injuries received in an automobile accident.

John Carl Walliser, Piedmont, Calif.; Universität Basel Medizinische Fakultät, Switzerland, 1874; aged 93; died, January 14, of cerebral hemorrhage and arteriosclerosis.

Alexander Boyce Marion, Brooklyn; University of the City of New York Medical Department, 1888; aged 76; died, February 16, in the Swedish Hospital of pneumonia.

Robert Ellegood, Seaford, Del.; Jefferson Medical College of Philadelphia, 1886; aged 77; died, February 15, in the Peninsula General Hospital, Salisbury, Md., of nephritis.

Warren Arthur Fitzgerald, Brooklyn; St. Louis University School of Medicine, 1935; aged 28; intern at St. Mary's Hospital, where he died, February 8, of pneumonia.

Oliver P. Worley, Hagerstown, Ind.; Physio-Medical College of Indiana, Indianapolis, 1886; aged 80; died, January 27, of arteriosclerosis and hypertrophy of the prostate.

Louis Henry Cisler, Marietta, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1895; aged 67; died, February 14, of nephritis and arteriosclerosis.

James F. Michel, Farmingdale, N. Y.; Syracuse University College of Medicine, 1886; health officer and bank president; aged 72; died, January 21, of myocarditis.

Ivan Procter Battle, Rocky Mount, N. C.; Jefferson Medical College of Philadelphia, 1904; aged 57; died, February 20, of angina pectoris due to coronary occlusion.

Pasquale Pio Eliseo, New York; George Washington University School of Medicine, Washington, D. C., 1933; aged 29; died, January 22, of pulmonary tuberculosis.

John Alexander Bortz, Quincy, Ill.; Keokuk (Ia.) Medical College, 1892; served during the World War; aged 74; died, February 8, of carcinoma of the prostate.

Duncan Gow, Calgary, Alta., Canada; Trinity Medical College, Toronto, Ont., 1884; L.R.C.S., Edinburgh, 1884; L.R.C.P., London, 1885; aged 75; died, January 12.

Morrow A. Miller, Los Angeles; Jefferson Medical College of Philadelphia, 1883; aged 78; died in February, of hypertrophy of the prostate and myocarditis.

J. Spencer Wright, Louisville, Ky.; Hospital College of Medicine, Louisville, 1902; aged 60; died, January 4, in the City Hospital, of coronary occlusion.

William Irby Cocke, Syracuse, N. Y.; Bellevue Hospital Medical College, New York, 1891; aged 75; died, January 6, of heart disease and arteriosclerosis.

Mason Lee Smith, Watertown, N. Y.; University of the City of New York Medical Department, 1881; aged 78; died, January 19, of chronic myocarditis.

Charles Oscar Allen, Logan, Ohio; Medical College of Ohio, Cincinnati, 1882; aged 80; died, February 2, of epithelioma of the heel with metastasis.

Calvin B. Stark, Miller, Ark.; Arkansas Industrial University Medical Department, Little Rock, 1890; aged 69; died, February 25, of lobar pneumonia.

Abner Columbus McCulley, Morganfield, Ky.; Meharry Medical College, Nashville, Tenn., 1901; aged 60; died, February 19, of cerebral hemorrhage.

Rufus Raymond Alwood, Montpelier, Ohio; Western Reserve University Medical Department, Cleveland, 1882; aged 83; died, February 8, of uremia.

William Luther Miller, Oklahoma City; University of Louisville (Ky.) Medical Department, 1888; aged 75; died, January 6, of cerebral hemorrhage.

Arthur Hall Mosher, Le Mars, Iowa; Rush Medical College, Chicago, 1882; aged 78; died, February 9, of cerebral thrombosis and arteriosclerosis.

Joseph M. Soper, Stuart, Iowa; Western University Faculty of Medicine, London, Ont., Canada, 1906; aged 57; died, January 29, of angina pectoris.

William Lemon White, Chewelah, Wash.; University of Oregon Medical School, Portland, 1890; aged 81; died, January 30, of pulmonary hemorrhage.

Carl Gruber, Clinton, Iowa; Hahnemann Medical College and Hospital, Chicago, 1886; aged 82; died, January 8, of arteriosclerosis and nephritis.

Edward Barr, Owensboro, Ky.; Louisville (Ky.) Medical College, 1903; served during the World War; aged 61; died, February 14, of tuberculosis.

Henry Garrybrant Jenner, Dayton, Ohio; Bellevue Hospital Medical College, New York, 1890; aged 71; died, February 6, of pernicious anemia.

Claude Wolcott, Amarillo, Texas (licensed in Texas, under the Act of 1907); aged 66; died, January 5, in St. Anthony's Hospital of angina pectoris.

James H. Coleman, Carterville, Ill.; University of Tennessee Medical Department, Nashville, 1882; aged 87; died, February 18, of carcinoma.

Oley G. Bean, Casselton, N. D.; State University of Iowa College of Medicine, Iowa City, 1898; aged 68; died, February 2, of cerebral hemorrhage.

Frank Howard Yarnall, West Lafayette, Ohio; Columbus Medical College, 1879; aged 83; was killed, January 25, when struck by an automobile.

Maria Whittelsey Norris, Grand Rapids, Mich.; Boston University School of Medicine, 1892; aged 82; died, February 4, of lobar pneumonia.

William Allen Mason, Uriah, Ala.; Medical College of Alabama, Mobile, 1906; aged 61; died, February 19, of acute dilatation of the heart.

Charles Hewitt Amys, Peterborough, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1899; aged 65; died, January 18.

William B. Carolus, Sterling, Ill.; Hahnemann Medical College and Hospital, Chicago, 1888; aged 77; died, February 13, of arteriosclerosis.

Augustine Charles McGuire, Pelham, N. Y.; Dartmouth Medical School, Hanover, N. H., 1894; aged 66; died, January 27, of myocarditis.

G. Frank Russell, Louisville, Ky.; Louisville Medical College, 1896; aged 77; died, January 27, of coronary occlusion and diabetes mellitus.

William Finkelstein ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1918; aged 50; died, January 7.

Thayer H. La Monte, Canaseraga, N. Y.; Eclectic Medical Institute, Cincinnati, 1880; aged 84; died, February 17, of coronary embolism.

Chesley R. Peck, Doylestown, Ohio; Louisville (Ky.) Medical College, 1893; aged 74; died, February 3, of coronary thrombosis.

Hiram A. Kendall, Buffalo; University of Buffalo School of Medicine, 1891; aged 72; died, February 14, of coronary thrombosis.

David Cecil Johnston, St. John's, Newfoundland; Queen's University Faculty of Medicine, Kingston, 1931; aged 34; died, January 8.

Charles Arnold Trotman, Neosho, Mo.; Washington University School of Medicine, St. Louis, 1901; was found dead, January 2.

John Steele Smith, Edmonton, Alta., Canada; University of Glasgow Medical Faculty, Scotland, 1900; aged 61; died, January 2.

William Robert Pope, Kosciusko, Miss.; University of Nashville (Tenn.) Medical Department, 1900; aged 67; died, January 2.

Larkin E. Williams, Clever, Mo.; Barnes Medical College, St. Louis, 1896; served during the World War; aged 66; died, January 4.

Virgil Ulyssus Moss, Rockfield, Ky.; University of Louisville Medical Department, 1872; aged 89; died, February 2, of uremia.

Bernard Livingston ✠ New York; Albany (N. Y.) Medical College, 1899; aged 62; died, February 7, of coronary occlusion.

Wilson Wesley Adams, Los Angeles; Rush Medical College, Chicago, 1883; aged 84; died, February 12, of arteriosclerosis.

F. Edward Smith, Baltimore; Maryland Medical College, Baltimore, 1902; aged 57; died in February of cardiorenal disease.

Jether J. Crawley, Greenfield, Tenn.; Kentucky School of Medicine, Louisville, 1907; aged 56; died, February 7, of heart disease.

Charles Lambert Brook Stammers, Smith's Falls, Ont., Canada; Trinity Medical College, Toronto, 1895; died, January 27.

Ambrose Thomas Stanton, London, England; Trinity Medical College, Toronto, Ont., Canada, 1899; died, January 25.

Marvin Simeon Stough, Dothan, Ala.; Atlanta College of Physicians and Surgeons, 1899; aged 60; died, January 3.

Leon Didier Gauthier, Providence, R. I.; Boston University School of Medicine, 1889; aged 71; died, January 23.

John Charles F. Bell, Lucas, Iowa; College of Physicians and Surgeons, Keokuk, 1883; aged 81; died, January 1.

Ira Ulman, Ramapo, N. Y.; Baltimore Medical College, 1906; aged 66; died, February 17, of coronary disease.

Richard L. Fite, Tahlequah, Okla.; Southern Medical College, Atlanta, 1881; aged 81; died, January 1.

John A. Stutz, Los Angeles; New York Homeopathic Medical College, 1886; aged 77; died, January 4.

George W. Van Horne, Grant Park, Ill.; Chicago Medical College, 1875; aged 89; died, January 9.

Correspondence

TREATMENT OF FRACTURED PATELLA WITH EXTERNAL PURSE STRING

To the Editor:—A simple but effective procedure has been found of service in the conservative treatment of simple or comminuted fractures of the patella. After the blood has been removed from the joint and the thigh flexed on the body with the leg in extension by some such apparatus as a Thomas splint, an external purse string is applied to the patella in the following manner: Pressure pads are applied and fastened by adhesive tape to the periphery of the patella; partially unrolled bandages well compressed will suffice. Then a length of elastic rubber tubing is carried around the pads, drawn snugly and clamped. It is well to use a small pad on each side of the patellar ligament. If a pad is placed on the ligament, the force applied will tend to tip the lower fragment forward; i. e., the fracture line will be forced away from the joint.

This method holds the upper fragment to a lower position than can be obtained by strapping, because the adhesive strapping slips over a period of time. The adhesive slips in this method but is compensated for by the constant tension of the rubber.

W. CRAIG HENDRICKS, M.D., Brookville, Pa.

ADMINISTRATION OF CALCIUM SALTS

To the Editor:—In Queries and Minor Notes (THE JOURNAL, March 19) a correspondent, inquiring about the use of calcium salts in asthma, is told to use "tricalcium phosphate 4 Gm. in milk three times daily, calcium lactate 2 Gm. four times daily or calcium gluconate 4 Gm. four times daily." The recommendation of the use of tricalcium phosphate in milk as a method of administration of calcium is so much at variance with what is known about calcium absorption that it seems desirable to call attention to the following experimental data and basic facts:

In 1927 Roe and Kahn (Absorption of Calcium from the Intestinal Tract of Human Subjects, THE JOURNAL, March 26, 1927, p. 980) observed a 91 per cent rise in the blood calcium of a normal human subject given 5 Gm. of calcium lactate in water by mouth and only a 28 per cent elevation of the blood calcium in the same subject on another day when given 5 Gm. of calcium lactate in milk hourly for eleven hours (a total administration of 55 Gm.). Similar failures to elevate the blood calcium appreciably when calcium lactate was given with carbohydrate or protein meals as compared with the response given when administered in water under fasting conditions were noted. These results demonstrated clearly that milk is an undesirable vehicle for the therapeutic administration of calcium and that the best results are obtainable when calcium salts are given not mixed with foods.

The results of Roe and Kahn were explained as being due to the influence of the digestive fluids on the absorption of calcium. The absorbability of calcium is dependent on its solubility, which in turn is influenced by the p_H of the intestinal contents. Calcium phosphate is highly insoluble in a neutral or alkaline medium. Calcium carbonate and the calcium salts of the higher fatty acids likewise have a low solubility under similar conditions. The introduction of foods into the intestinal tract brings forth a secretion of bile, and pancreatic and intestinal secretions which are alkaline fluids. As the acid chyme entering the duodenum is neutralized by these fluids and the p_H of the intestinal contents shifts toward the alkaline range, the solubility of calcium phosphate or calcium bicarbonate or calcium salts of fatty acids is diminished, and finally, when the reaction reaches a neutral or alkaline p_H, these salts are quite insoluble and the absorption of calcium, if present as any of these compounds, becomes very slight. It is clear then that the most favorable absorption of calcium from the intestinal tract is obtained when the drug is administered free from the influence of foods. For these reasons the therapeutic procedure of administering calcium compounds in water or fruit juices from one-half to one hour before meals has been widely adopted.

The advice to your correspondent also raises the question of whether calcium phosphate should be used at all in the administration of calcium orally. The chemical and physiologic facts mentioned are opposed to such usage. Even though the acid calcium phosphate is administered, the objection still remains that the phosphate becomes a chemical precipitant of calcium as soon as the p_H of the intestinal tract reaches a neutral or alkaline range. Further space need not be consumed here to show that the experimental data in the literature on this subject indicate conclusively that calcium is best absorbed when administered as one of the salts which does not include a calcium precipitating ion when the p_H of the intestinal tract is increased.

Apparently the use of calcium phosphate has come about as an attempt to increase the nutritive supply of inorganic phosphate as well as to supply calcium. Even granting the desirability of making available to the organism an increased amount of phosphorus, a better result would be obtained by administering calcium and phosphorus as constituents of other compounds than calcium phosphate and not simultaneously. But the desirability of the administration of phosphate for nutritive purposes, when there is ingested the usual diet which contains phosphoproteins and phospholipids and which normally brings about the excretion in the urine of from 1 to 3 Gm. of phosphate, as P_2O_5 per twenty-four hours, is as yet unproved.

JOSEPH H. ROE, PH.D., Washington, D. C.
Professor of Biochemistry, George Washington University School of Medicine.

BENZEDRINE SULFATE

To the Editor:—No one who has the advance of medicine and the safety of the public at heart can fail to agree with the main tenets of the editorial which appeared in THE JOURNAL March 19 entitled "Benzedrine Sulfate—A Warning." No powerful drug should be sold over the counter, nor should it for any purpose whatsoever be self administered. This reproach does not apply, of course, merely to benzedrine sulfate but to the wide and indiscriminate use of bromides, barbiturates and even the apparently innocuous vitamins.

However, there are certain definite exceptions to take to the editorial in reference to the specific article with which it concerns itself; namely, the article by us on obesity. In the first place, these patients were selected from an internist's (Dr. Lesses') office practice and, on the whole, would not be distinguishable from the bulk of obese patients. True, they were mainly anhedonic, but the point of the paper is that in large measure obesity represents an impaired appetite and impaired activity of anhedonic nature, and the value of the drug used lay in the fact that it helped counteract these symptoms and thus enabled the patient to carry out more adequately the dietary treatment prescribed. Your statement, therefore, that "even if benzedrine could be safely and effectively used to reduce weight there is no evidence that it will have any permanent effect on weight" is entirely beside the point. No drug operates ad infinitum. No drug in itself produces the fortitude of character and the discipline of personality by which individuals keep their weight down to normal after it has once been brought to this level. The diabetic patient has to keep on using insulin, which is no argument against insulin, and there is no guaranty that the proper use of digitalis will keep the heart muscle normal after the digitalis is discontinued.

As to addiction, the drugs to which human beings become addicted are the narcotics. There is no evidence in the entire literature of medicine that stimulants become habit forming. Alcohol, morphine, cocaine—to select a few—are narcotics, and it is a necessary part of the habituation process that larger and larger doses are required to produce the effect. One of us (Myerson) has had clinical experience with benzedrine sulfate for more than two years in a very large number of cases and has not seen a single case of addiction in the sense that a person, otherwise well, now feels it necessary to take the drug habitually and in ascending doses to produce a desired effect. The bad effects of an overdose of benzedrine sulfate immediately bring about a cessation of its use. Automatically the patient drops it. Even caffeine, which is a powerful stimulant, is never used as a drug; it is used as a beverage, and until benzedrine sulfate is introduced as a beverage no one need fear in any consequential manner drug addiction.

The abuse of a drug is no argument against its use. Normal fatigue demands rest, and this is its only cure. Abnormal intake of food demands normal intake if obesity is finally to be cured. All any drug can do is to help the individual under proper supervision to reach those habits of mind and body which finally bring about and preserve health.

MARK FALCON LESSES, M.D.
ABRAHAM MYERSON, M.D.
Boston.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

INDUSTRIAL POISONS, WAR GAS AND LEUKEMIA

To the Editor:—I am much interested in the pathogenesis of leukemia. Have cases been reported following industrial poisoning? Is there any known relationship to war gas poisoning or have cases been reported following such exposure? M.D., New York.

ANSWER.—The evidence that leukemia may develop following various types of industrial poisoning is only fragmentary and certainly questionable. The evidence is indirect and includes a few reported instances of leukemia following exposure to toxic agents, particularly benzene and radioactive materials, including radium and x-rays.

Concerning the development of leukemia after the exposure to bezene in industry, Falconer (*Am. J. M. Sc.* **186**:353 [Sept.] 1933) reported an instance of lymphatic leukemia in a white man four years after an attack of acute benzene poisoning by inhalation. He suggested that the leukemia may have developed as an overcompensatory measure for previous destruction of leukopoietic tissues.

Delore and Borgomano (*J. de méd. de Lyon* **9**:227 [April 20] 1928) reported an instance of leukemia developing in a man who had been exposed to benzene for five years, using it as an extracting agent in the manufacture of aminopyrine.

Alice Hamilton (Industrial Toxicology, New York, Harper & Brothers, 1934, p. 163) refers to an observation of Martland, who noted a blood picture characteristic of myelogenous leukemia in a patient with benzene poisoning. Also she has seen two such cases herself.

There is certain experimental evidence to indicate the possible association of benzene poisoning with leukemia. If benzene is injected into laboratory animals, the usual result is a suppression of hematopoiesis. Thus, aplastic anemia is the usual result not only in laboratory animals but in persons suffering from benzene poisoning. However, Bungeler (*Klin. Wchnschr.* **11**:1982, 1932) administered small doses of indole to mice and was able to produce a wide variety of hematopoietic pictures, which included apparently leukemic states in a few of the animals. Also Lignac (*Klin. Wchnschr.* **12**:109 [Jan. 21] 1933) injected mice with benzene and reported leukemic blood pictures in some of the animals. Bernard (*Sang* **8**:28, 1934) injected tar into rats and observed leukemic blood pictures in a small percentage of them.

It appears possible that any agent such as benzene that is known to be capable of producing suppression of marrow activity could conceivably, when used in smaller doses, produce various degrees of marrow hyperplasia resulting in the development of the leukemic states. The Parsonses (*J. Indust. Hyg. & Toxicol.* **20**:124, 1938) have reported two instances of severe granulopenia after exposure by inhalation to ethylene glycol monomethyl ether, which is a component of methyl "cellosolve" used in stiffening shirt collars. Furthermore, Greenburg and his associates (*J. Indust. Hyg. & Toxicol.* **20**: 134, 1938) found a shift toward granulocytic immaturity in all of nineteen employees engaged in this work and disturbed erythropoiesis in nine.

Development of leukemia after exposure to radioactive substances also seems possible. Carman and Miller (*Radiology* **3**:408 [Nov.] 1924) reported an instance of lymphatic leukemia in a radiologist, and von Jagic and his associates (*Berl. klin. Wchnschr.* **48**:1220, 1911) cited three cases of lymphatic leukemia after excessive exposure to radium. Also Weil and Lacassagne (*Bull. Acad. de méd. Paris* **93**:237 [March 3] 1925) observed an instance of typical myelogenous leukemia in a person who had been working with radium and thorium X. Weil (*Presse méd.* **33**:1297 [Sept. 30] 1925) observed two instances of myelogenous leukemia in persons who had been working with radioactive substances. Concerning this question Martland (THE JOURNAL, Feb. 16, 1929, p. 552) said "The opinions of different authorities all agree that contact with radioactive substances and x-rays frequently produces . . . a leukopenia, more rarely a leukemia. . . . All workers with x-rays and radioactive substances are potential candidates at any time for the development of a serious and fatal anemia or leukemia." On this basis it would appear indicated in all instances of leukemia to investigate possible contact with such agents.

There seems to be no relation between leukemia and war gas poisoning. Gilchrist and Matz (Special Bull. Chem. Warfare Service U. S. Army, Washington, D. C., Government Printing Office, 1933) made a careful study of representative groups of the 70,752 United States soldiers who were gassed during the World War and among the various complications leukemia was not noted. This study included persons who had been gassed with chlorine, mustard gas, phosgene and arsine.

Matz writes: "As far as I know from a study of a large group of veterans who were actually gassed during the World War I am unable to find any cases which gave residual evidence of chronic myeloid or lymphatic leukemia or acute leukemia immediately following the gassing. In addition, I have gone over a number of publications on the effect of gassing administered both experimentally and during actual warfare and find no reference or evidence of a causal relationship. Accordingly, I am of the opinion that there is no relationship between warfare gassing and leukemia."

OPERATIONS IN EPILEPSY

To the Editor:—A patient with traumatic epilepsy from an automobile accident has asked about the treatment of epilepsy by removing the top of the skull to relax irritated brain attachments. Any information that you can give me will be appreciated. M.D., Virginia.

ANSWER.—Decompression or trepanation for convulsions was the earliest proved adventure of man into the field of major surgery. The surgical approach to the brain for the treatment of convulsions is therefore not a recent or new method. In all cases of epilepsy in which trauma is actually or thought to be a factor a careful neurologic, psychiatric and encephalographic examination is indicated for the sole purpose of determining whether or not the convulsive seizures are due to either an idiopathic convulsive state or a definite organic disturbance involving the meninges, the cortex or the subcortical brain tissue. Removing "the top of the skull" to relax irritated brain attachments in idiopathic epilepsy is useless, according to neurologic surgeons. If careful examinations show definite evidence of organic involvement of the meninges, cortex and subcortical brain tissue and if the auras and history of the convulsion have a definite causal relationship between the onset of the trauma and the beginning of the convulsions, surgical intervention is indicated. It has been well established that, when the brain is injured and the damaged cerebral tissue is not removed, a scar of fibrous astrocytes, connective tissue and newly formed blood vessels develops. This scar soon becomes densely adherent to the overlying meninges and, like all cicatricial tissue, contracts. Otto Foerster and Wilder Penfield (Epilepsy and the Convulsive State, Baltimore, Williams & Wilkins Company, 1931) have described the mechanism of the pull of the cicatrix and the pathologic change found in the

scar tissues removed at operation. Loyal Davis of Chicago states that the pathogenic relation between the formation of a scar in the brain as the result of an injury, the development of a vascular plexus, the steady pull of the contracting scar, and epileptiform seizures is definite. Only the careful study of patients will answer the question of the wisdom of the surgical excision of scar tissue for the relief of post-traumatic epileptic seizures. Davis's group of patients who were operated on were limited to those who had organic evidences of the severity of their original injury, those who had organic symptoms following their convulsions and those in whom encephalographic studies demonstrated a mechanical defect. His results have been definitely encouraging. Even though the scar can be removed surgically, however, it may be necessary to give the patient bromide or phenobarbital postoperativelv.

SOFTENING CITY WATER SUPPLIES

To the Editor:—I have a question pertaining to water softening on a commercial scale for my particular city. We have very hard water, which comes from wells. This is chlorinated and rates high as far as purity and taste are concerned. However, I am interested in the degree of softness possible. Is there any valid reason why municipal water plants should not soften their drinking water? Is the process expensive? Does it affect the taste of the water in any way? How generally is water softened in cities of 30,000?

M.D., Ohio.

ANSWER.—As a general rule, in a community having an objectionably "hard" public water supply, it can be readily demonstrated that the extra cost of soap and other compounds for water "softening" by domestic, commercial and industrial consumers would be more than sufficient to pay the cost of softening the entire water supply for the community. The cost of the softening process would depend on the degree of hardness of the water originally and on the extent to which it is desired to soften.

The chemicals most commonly used in softening public water supplies are lime, lime and soda ash or base exchange materials known as zeolites, which are silicates containing sodium.

With proper control over the chemical treatment of the water softening process, the palatability of the water should not be affected.

The softening of public water supplies as an economic measure as well as one of public convenience has developed rapidly during the last ten years, especially in the central western and southwestern sections of this country.

HABITUATION TO SEDATIVES AND WITHDRAWAL

To the Editor:—A member of my family, a woman 39 years of age, has suffered from insomnia for about two years. The onset followed the sickness and death of her baby at the age of 3½ months. So far as I know she has no unusual worries and is apparently in good general health. She has been examined by a competent internist, a professor of gynecology and a professor of neurology, all of whom report nothing abnormal. At the birth of her child, pentobarbital sodium was used and she since has taken various members of the barbituric acid series. She is able to sleep quite well under a sedative but seems unable to sleep otherwise. On several occasions no sedative was taken and the next day found her completely exhausted and highly nervous. Warm drinks, bromides and nightly warm baths are without effect. I have been advised by the men who have seen her that she should choose the lesser of two evils; namely, the sedative. They seem to agree that it is better for her to take something and sleep rather than take nothing at all and be miserable the entire next day. I cannot make myself believe that any sedative frequently repeated is without harm. I believe it should be stopped, but how to stop it is quite another thing. Can you suggest some help?

M.D., New York.

ANSWER.—Although the barbiturates are not considered to be habit forming drugs in the strictest sense of the term, instances similar to the one described are common. Dependence is placed on the drug to induce sleep and the patient is unable to go to sleep without it.

After a period of use as long as the one described, it is difficult, if not impossible, to withdraw the drug suddenly unless a substitute is used which is milder in action. The barbiturates as a class comprise the more powerful hypnotics and sedatives. The simple bromides are among the mildest of the sedatives. In substituting a bromide for a barbiturate there is an abrupt change in sedative power. In a case such as described, the following method may be tried: The barbiturate is stopped and in its place a drug which is midway in sedative action is substituted, such as carbromal (U. S. P. XI). This is diethylbromacetyl urea and is not a barbiturate. This may be given in doses up to 1 Gm. if needed about a half hour before bedtime. The dose is reduced gradually until perhaps 0.3 Gm. is sufficient. Then a solution of sodium bromide is substituted. This is then gradually reduced as the patient regains his ability to sleep. The bromide is then discontinued. The process may be somewhat slow and the time of withdrawal of all sedation somewhat long, but if persisted in the patient will become accustomed to sleep without sedatives.

It would seem advisable in this case to attempt to find the underlying cause of the insomnia. If this could be removed, permanent relief might be hastened.

HERPES SIMPLEX IN TROMBONE PLAYER

To the Editor:—I am asked to give advice to a nationally famous trombone artist who asks: "I am continually bothered with fever blisters on my lips. Would you advise me to play while I have them? What should I do to prevent them?"

M.D., Illinois.

ANSWER.—The present theory of the etiology of herpes simplex is based on the presence in the fluid from herpes vesicles of a virus that causes herpes on the cornea of animals when inoculated and often is absorbed, causing an encephalitis. This virus is filtrable, withstands drying, and is destroyed by a temperature of 56 C. and by bile. It is pathogenic for rabbits, guinea-pigs, cats, dogs and mice but not for cold blooded animals or for birds. It is neurotropic in animals and dermotropic in man.

The filtrate of an emulsion of brain of herpes encephalitis can be inoculated on the cornea of another animal and will cause herpes there and often encephalitis. It is thought, therefore, that the various diseases and physical, actinic or nervous traumas, all the influences formerly thought of real etiologic significance, are only provocative. They cause a lowering of the resistance to the herpes virus, already latent in the tissues, allowing it to act and cause a vesicular eruption. The nerve endings in the skin or mucous membranes seem to be the tissues acted on by the virus. Most persons harbor the virus, according to this theory, but maintain enough resistance to keep it ordinarily in abeyance.

Biberstein and Jessner (Untersuchungen zur Herpesfrage, *Arch. f. Dermat. u. Syph.* **173**:48, 1935) found that the application on scarified skin of a sterilized emulsion of the brain of rabbits or guinea pigs with herpes encephalitis caused no reaction in persons with symptomatic herpes, the ordinary form, but regularly caused a reaction in those with recurrent herpes. Apparently the recurrent form of herpes is accompanied by a hypersensitiveness to the herpes virus. With repeated use of the vaccine in this way they succeeded in desensitizing eleven of thirteen patients treated.

Early in this century Plesch had inoculated himself with serum from a vesicle of his own eruption and thereafter was free from herpes for many years, though he had had attacks frequently before this. He then treated patients in this way with many successes. Others have used this method with varying results. Schmidt (Vaccination for Herpes, *Arch. Dermat. & Syph.* **32**:106 [July] 1935) reported four cases in which treatment was given in this manner. Two of the patients were free from herpes for two years after one inoculation. The other two required a second treatment, after which they had no further attacks. The first vaccination caused a local reaction in all, redness, warmth and slight elevation. In one patient there were a general reaction, chilly sensations and nausea for a short time several hours after the inoculation. Neither of the second inoculations caused a reaction of any kind.

Alcoholic drinks, strong condiments and tobacco should be avoided. Autoserum or autoblood injections have been of service in preventing recurrences. Ultraviolet irradiation of the site of the herpes and roentgen rays in divided doses between attacks are helpful. Cinchophen has been of service in preventing recurrences on the mucous membranes. Phenobarbital in doses of 0.05 Gm. has been successful in the experience of Laurent (Une traitement nouvelle de l'urticaire, de l'herpes et du zona par le phenyl-ethyl-malonylurée [phenobarbital], *J. de méd. de Paris* **56**:268 [March 26] 1936). Dainow (Note preliminaire sur le traitement de l'herpes et du zona par le vitamine C [acide ascorbique], *Ann. de dermat. et de syph.* **7**:817 [Sept.] 1936) claims that vitamin C in a 0.1 Gm. dose intravenously once a day caused the rapid clearing of the herpes eruption; but he was not able to prevent further attacks except in the menstrual cases in which the recurrences could be predicted.

The most popular treatment of herpes is the frequent dabbing of the vesicles with spirit of camphor. Some patients prefer to apply lotio alba (sulfurated potash 1 Gm. and zinc sulfate 1 Gm. in 30 cc. of rose water). This should not be kept long, for it deteriorates.

It seems advisable for the trombonist to refrain from playing when afflicted with herpes, for irritation may increase the frequency of the attacks.

ACQUIRED OR CONGENITAL SYPHILIS IN PREGNANCY

To the Editor:—Please summarize for me the best methods for treating the following case of syphilis: A primipara, married nine years, whose husband has diabetes, missed two periods, and the signs and symptoms are those of a pregnancy. A Wassermann test several years ago was positive. She cannot recall primary or secondary signs of syphilis. She was given neoarsphenamine and after a few treatments had a severe arsenical dermatitis. After about six weeks she was able to return for treatment and bismuth injections were used. She again had a severe dermatitis. Since then she has been unable and afraid to take injection therapy but has taken mixed therapy by mouth. Her Wassermann reaction is now two plus. A spinal Wassermann test has not been taken. Her reflexes are normal. Her general condition is good and she has no complaints. She believes she has congenital syphilis, because her mother and brother have both been found to be infected. The serologic reaction of her father is negative.

M.D., West Virginia.

ANSWER.—It is rather important in this case that the question of congenital syphilis or acquired syphilis be answered. It makes a great deal of difference in the outlook for the patient and certainly for the unborn child. The fact that the mother has syphilis and the father has a negative serologic reaction is of course suggestive that the patient may have congenital syphilis. It is stated that there are no manifestations of active syphilis. On the other hand, is there any evidence of a keratitis, of Hutchinson's teeth, of mulberry molars, of eighth nerve deafness or of saber shins? Is there a history in the past of cutaneous manifestations of any type that would suggest prenatal syphilis? Certainly if the patient has congenital syphilis one need not worry particularly about the outcome as far as the unborn child is concerned. For the present it is suggested that she be put on intramuscular injections of colloidal mercury sulfide, Hille, 3 cc. twice a week, for probably ten weeks. If there is any question as to the patient's having congenital syphilis as against acquired syphilis, it might be well for a consultant to see the patient. In case this is acquired syphilis, attempts should be made to use arsenical therapy as well. In patients who are sensitive to neoarsphenamine it is sometimes possible to employ some other arsenical, for example, mapharsen, starting off cautiously in small doses. If the patient has acquired syphilis, and if it is in any way possible, she should receive therapy with alternating courses of arsenic and mercury until the birth of the child.

GOLDTHWAITE AND ELY SIGNS IN LOW BACK DISEASE

To the Editor:—Please explain the Goldthwaite and Ely signs used in the differentiation of conditions in the lower part of the back. How are they performed? What are the pathologic conditions present to cause a positive sign and what is the clinical significance of each?

M.D., California.

ANSWER.—The test used in the differentiation of disorders in the lower part of the back which has sometimes been attributed to Goldthwaite is simply that of straight leg raising. This test has to be interpreted on the basis of leverage transmitted through the hamstrings to the pelvis. It is performed correctly by flexing the thigh with the knee extended and the foot held in a position of 90 degrees dorsiflexion in order to keep the gastrocnemius, as well as the hamstrings, taut. The leg should be raised slowly with one hand under the lower part of the patient's spine. As the hamstrings tighten, leverage is gradually applied to the side of the pelvis. If pain is brought on before the lumbar spine begins to move, a lesion which may be either an arthritis or a sprain of the ligaments involving the sacroiliac joint is probably present. If pain does not come on until after the lumbar spine begins to move, the disease or injury may be in either the sacroiliac or the lumbosacral articulations but is more likely to be lumbosacral. The straight-leg raising test should be repeated on the side opposite to that of which the patient primarily complained. In this instance, if the lesion is lumbosacral, pain should be felt when the leg is raised to approximately the same height as that which produced pain when the leg was raised on the side complained of. If the lesion is primarily sacroiliac it should be possible to raise the leg on the less involved side to a much higher level than on the side complained of, without pain. Acute or chronic inflammation of lumbosacral or sacroiliac joints due to trauma, such as an acute or chronic back strain, or to infection such as tuberculosis, pyogenic arthritis or degenerative changes in the articulations themselves, may be the predisposing factors.

The Ely sign has rarely been mentioned in discussions of pain in the lower part of the back. In 1933 Ely stated in an article (Backache, Lumbago; Pain in the Lower Part of the Back, *Arch. Surg.* **27**:189 [July] 1933) that hyperextension of the leg at the thigh with the patient lying face downward would produce pain if there was a lesion in the lumbar spine or at the lumbosacral joint. In a letter Oct. 25, 1937, sent in response to a direct query, Dr. Ely stated that this test should be performed with the patient lying prone and the knee flexed. If the test is positive the pelvis will rise from the table before complete extension of the thigh. The author of the test stated that he was not able to determine the exact significance of it but believed that it was positive when there was an irritative lesion low down in the lumbar spine. The studies of Ober, Williams and Goldthwaite would suggest that this sign might be due to a tight iliotibial band and attempt at hyperextension of the thigh would tend to rotate the pelvis downward and to sharpen the angle between the lumbar spine and the sacrum, mechanically contributing to the irritation of the lower lumbar nerve roots.

It would seem that a positive Ely sign is simply one more indication of a lumbosacral lesion.

ERUPTION OF TEETH AND OSSIFICATION OF BONE IN DETERMINING AGE

To the Editor:—Which is the more authentic in determining the age of a person: roentgenograms of the long bones or of the teeth? The claimed age is 4 years and 8 months. From the long bones such an age is possible, but the pictures of the teeth show that this person has eleven permanent teeth, which, according to various charts, should not be. According to the charts the boy is at least 8 years old. He has the following permanent teeth:

Central incisors	two upper and two lower
Lateral incisors	both lowers
First bicuspid	both right and left lower
Second bicuspid	left lower
First molar	both right and left lower

It is the opinion of those to whom the question was put that at the age of from 4 to 9, the roentgenograms of the teeth would be more certain in determining the approximate age, as the time in which the teeth are erupting is rather certain. However, after all the teeth have erupted, the long bones might be a better method of determining age. I should like to obtain a comparison of the two methods of determining the age of a person, particularly a person between the ages of 4 to 10. As this case is coming to early trial, I would appreciate an early reply.

M.D., Washington.

ANSWER.—The time at which teeth erupt is not an invariable or absolute one. The period of eruption varies not only with the age of the child but also with the rate of body growth in general. Taller children cut their teeth earlier than smaller children. It has also been maintained that there is a relationship between eruption of the teeth and growth and size of the palate. It has not been possible to correlate in point of time the eruption of the teeth to the ossification of the bones of the wrist. It goes without saying that there is a strong relationship between the state of nutrition and the eruption of teeth. Mineral or vitamin deficiency may retard the eruption considerably. Racial and economic differences may also influence the period of eruption. While the temporary teeth appear at intervals with some regularity, the permanent teeth appear with considerable irregularity, and the intervals between the eruption may vary within wide limits. It is obvious from these considerations that neither the eruption of the temporary or the permanent teeth offers definite or invariable information as to the chronological age of the child.

Age Periods at Which Certain Bones Undergo Ossification

	Girls	Boys
Os capitatum (os magnum)	Between 3 & 6 mo.	Between 4 & 10 mo.
Os hamatum (unciform)	Between 3 & 6 mo.	Between 6 & 12 mo.
Os triquetrum (cuneiform)	Between 2 & 3 yr.	With 3rd yr.
Os lunatum (semilunar)	Between 3 & 4 yr.	With 4th yr.
Os naviculare (scaphoid)	Between 4 & 5 yr.	With 5th yr.
Os multangulum minus (trapezoid)	Between 4 & 5 yr.	In 5 & 6 yr.
Os pisiforme (pisiform)	Between 9 & 10 yr.	In 12 & 13 yr.

Using the carpal bones as an index, various investigators have established the difference between the ossification periods that occur in boys and in girls. The accompanying table enumerates the age periods at which, under normal conditions, these bones undergo ossification in both sexes.

In considering both of these methods of establishing chronological age, the evidence seems to indicate that neither method should be expected to give absolutely correct values. Both methods should be considered only approximate and subject to numerous variations. All things considered, however, the bony development would probable give a more approximately correct index than the sequence of tooth development.

It must be assumed also that such abnormal conditions as congenital syphilis, hypothyroidism, glandular disturbances and avitaminoses such as rickets do not enter into the picture, as these diseases alter the time of eruption of the teeth and the progress of bony development to a considerable extent.

EXTREME HYPERGLYCEMIA

To the Editor:—A patient, brought into the hospital in diabetic coma, had a blood sugar on admission of 1,500 mg. per hundred cubic centimeters. This was checked several times. Within twelve hours the blood sugar was down to 750 mg. and this was the last reading before he died. Will you kindly inform me whether similar blood sugars have been reported before?

M.D., Minnesota.

ANSWER.—Lawrence reported a blood sugar reading of 2,060 mg. per hundred cubic centimeters in a patient who had received 40 units of insulin two hours previously. This is the highest value recorded in the literature. Blood sugars of 1,710 and of 1,700 mg. occurred in cases reported by Argy and by Pitfield.

Dillon and Dyer record the highest blood sugar value in a patient who survived; the patient entered the hospital in diabetic coma with a blood sugar of 1,850. These authors report fifteen other cases with admission blood sugars of 1,000 mg. or more; five patients recovered.

Joslin, reviewing the subject of extreme hyperglycemia, reports blood sugar values of 1,000 mg. or over in thirteen of 338 consecutive cases of diabetic coma. Of the thirteen patients, eight recovered. The highest blood sugar value in his series was 1,620 mg., occurring in a patient who survived. Joslin concludes that although blood sugar values of from 300 to 600 are the rule in diabetic coma, a high blood sugar does not necessarily imply a poor prognosis.

The references are as follows:

Lawrence, R. D.: Extreme Hyperglycemia in Diabetic Coma, *Brit. M. J.* **1**: 377 (March 3) 1934.

Argy, W. P.: Hyperglycemia (1.71 per cent) with Coma, Associated with Absence of Acetone in the Urine, *Boston M. & S. J.* **193**: 1236 (Dec. 31) 1925.

Pitfield, R. L.: Unusually High Blood Sugar Content in a Case of Diabetes, *M. J. & Rec.* **120**: 433 (Nov. 5) 1924.

Dillon, E. S., and Dyer, W. W.: Diabetic Coma with Extreme Hyperglycemia, *Am. J. M. Sc.* **190**: 683 (Nov.) 1935.

Joslin, E. P.: Treatment of Diabetes Mellitus, ed. 6, Philadelphia, Lea & Febiger, 1937, pp. 114, 128, 362.

COMPLICATIONS OF PARATYPHOID INFECTION

To the Editor:—Please send to me any information you have regarding the lung and intestinal involvements and febrile reactions in paratyphoid A infection. I have recently had a patient who seems to have persistent lung and intestinal symptoms and low grade fever. Please advise also as to the use of vaccines, serums and the like in treating this phase of the disease.

RALPH L. MOORE, M.D., Woodbury, N. J.

ANSWER.—It is difficult to answer these questions specifically without knowledge of how the lung and intestinal involvements manifest themselves. Lung complications are thought to be more common with paratyphoid A infections than with either typhoid or paratyphoid B. Bronchitis is almost as much a part of the disease as is the fever. The bronchitis usually subsides during the second week but may persist throughout the entire course. Bronchopneumonia and even lobar pneumonia are not infrequently encountered. These are not as a rule due to the paratyphoid bacillus but are caused by secondary invaders. Lung abscess and gangrene and pulmonary infarction occur infrequently and as the result of embolism. Pleurisy, either serofibrinous or suppurative, occurs somewhat more frequently. Pulmonary tuberculosis occasionally follows paratyphoid. It is doubtful that the disease initiates a tuberculous process, but it probably allows a latent tuberculous focus in the lung to become active.

The disease extensively involves the intestinal tract and this in itself may produce diarrhea, distention or abdominal pain. The organisms may be found in the bile in almost every case and it would seem that this would predispose the patient to cholecystitis, cholangitis and hepatitis, and yet these complications are rather rare. Invasion of the mesenteric lymph glands occasionally produces long continued abdominal pain and discomfort. Abscess of the spleen has been reported, but this also is rare.

The question does not state how long the infection has lasted in this patient. Fever often persists a long time. It is thought that such patients have difficulty in developing a complete immunity to the disease. Relapse after a free period of ten days or two weeks sometimes occurs and the course of the relapse may be quite atypical. Any of the complications mentioned could produce a long continued low grade fever. This is particularly true of infected mesenteric glands, which might also produce abdominal distress and discomfort. Another possible obscure cause for fever is venous thrombosis. A favorite place for such thrombosis is the abdominal or pelvic veins or the veins of the leg. It is in such cases that the embolic phenomena are likely to occur.

There is no evidence to show that the use of vaccines or serums is of any value in the treatment of the acute phase of the disease. Foreign protein shocks are sometimes used to call forth additional immune bodies, but the use of foreign protein shocks may be disastrous in the presence of some of the possible complications in this case. Their use should not be considered unless their safety can be assured.

ELEMENTS AND HUMAN BODY

To the Editor:—How many positively known elements are there now? How many positively known elements are there that enter into the composition of the human body? Please give me the names of the last ten elements discovered and the approximate dates.

GEORGE C. CROSTON, M.D., Sapulpa, Okla.

ANSWER.—At present eighty-eight different elements are recognized, if isotopes are not included. The last one, which is not named, was discovered in 1931. The other ten of the most recently found elements are helium (1895), neon (1898), krypton (1898), xenon (1898), radium (1898), lutecium (1907), hafnium (1923), rodon (1925), rhenium (1925) and illinium (1926). The elements found in protoplasm which are known to be of biologic value are hydrogen, carbon, nitrogen, sulfur, oxygen, phosphorus, iron, copper, zinc, manganese, sodium, potassium, calcium, magnesium, chlorine, fluorine and iodine. Those of doubtful value in protoplasm are bromine, arsenic, aluminum, nickel, silicon, strontium, cobalt, selenium, vanadium and lead. Traces of many other elements may possibly be found in tissues, but their presence probably is accidental.

EFFECT ON BODY OF HIGH TENSION ELECTRIC CURRENT

To the Editor:—1. If a person standing on the ground took hold of a wire conveying 66,000 volts, would it be possible for him to live five or six hours? 2. Under these conditions what would be the probable condition of the body? 3. Would it be possible for a person to let go, before death, of a wire carrying 66,000 volts? Any references to the literature will be greatly appreciated.

M. W. HAWS, M.D., Fulton, Ky.

ANSWER.—1. It is difficult for a person to "take hold" of a wire carrying a current of 66,000 volts with bare hands. High tension currents usually arc before actual contact is made and muscular contraction will frequently cause the body to fall away from contact, though arcing once established may extend for long distances. Because of poor contact and its brief duration, efforts at resuscitation are more successful in high tension shocks than in any other type. It is possible but improbable that the victim might live five or six hours after the shock without artificial respiration. Recovery has been reported after continuous artificial respiration for eight hours.

2. The body should show electrical burns at least in regions of proximal contact. Heat burns from ignited clothing are frequently present.

3. See answer to question 1.

Specific data are available in Maclachlan, Wills: Electric Shock: Interpretation of Field Notes, *J. Indust. Hyg.* **12**:291 (Oct.) 1930; **16**:52 (Jan.) 1934.

An extensive bibliography accompanies the paper on Effect of Electric Shock on the Heart, by Ferris, L. P.; King, B. G.; Spence, P. W., and Williams, H. B.: *Electrical Engineering* **55**:498, 1936.

PAROXYSMAL RAPID BREATHING

To the Editor:—A man has spells of rapid respiration, during which he breathes from fifty to sixty times a minutes for from a few minutes to as long as half an hour. He can tell when the spell is coming on by a feeling of faintness but he never faints. This condition is much worse in summer, especially if he is in a stuffy room or working in the heat. The lungs and heart are normal. I would appreciate any information regarding other cases of a similar nature, if any.

FREDERICK J. VOLLMER, M.D., Howard, S. D.

ANSWER.—This patient has a hysterical or neurasthenic tachypnea. Such cases are well recognized. Ronald V. Christie ("Some Types of Respiration in the Neuroses," *Quart. J. Med.* **4**:427 [Oct.] 1935) found that an important fraction of all patients classified as suffering from neuroses had respiratory complaints. These were easily recorded on the tracing of the metabolism apparatus. There were several types of respiration: that which this patient has, occasional sighing, constant, moderately rapid, deep respirations, and irregular breathing. In extreme cases the overventilation is continued until alkalosis and tetany occur. The induction of the tetany in such cases was found to be a requirement of the hysteria.

Associated neurotic symptoms are usually present, such as suffocation, globus hystericus, palpitation, weakness, tremor and sweating, so that if the cardiac symptoms are pronounced the case is usually classified as neurocirculatory asthenia.

ACRIFLAVINE IN GONORRHEA

To the Editor:—While sojourning in England I chanced to visit the general hospital at Birmingham, England. They used intravenous acriflavine in more than 5,000 cases of acute gonorrhea, with excellent results. I have been looking over THE JOURNAL but cannot find anything on this method. Will you inform me if there is any danger in its use, 2 per cent, from 2 to 4 cc., once every second day?

G. GLENN WHITE, M.D., San Diego, Calif.

ANSWER.—If references in American literature concerning the use of intravenous acriflavine therapy in acute gonorrhea reflects its popularity in this country, it is definitely not in vogue. Acriflavine is one of the many dyestuffs discovered by Ehrlich to have bactericidal value. In the treatment of gonorrhea it has been given orally, subcutaneously and intravenously, and it has been used as an irrigation and as an instillation.

Edward Hughes and C. A. Birch (*Lancet* **2**:633 [Sept. 16] 1933) reported using acriflavine in more than 100 cases of acute gonorrhea. They used the drug subcutaneously and found the injections to be painful. Intravenously 10 cc. of 1 per cent solution was injected three times a week. They state that its use may lessen the number of complications but in fifty cases found three cases of epididymitis and three cases of acute arthritis. The average duration of gonorrhea under this treatment was 116 days. As complications due to the drug, several thromboses of the vein occurred, two cases of jaundice and one generalized rash. Therefore the drug may cause liver damage and apparently does not control gonorrhea as well as more recent methods of therapy.

ARTIFICIAL PENIS

To the Editor:—About eight months ago a man had an amputation of the penis, the amputation removing about one half of the shaft. Recovery has been uneventful and complete. He has been happily married for seven years to a highly sexed woman. There have been no pregnancies, but no contraceptives have been used at any time. As a result of his condition and her sexual make-up they are, at the present, terribly unhappy and unless something can be done will undoubtedly separate. Are there any concerns that might make an artificial penis?

M.D., Michigan.

ANSWER.—Some dealers in surgical instruments are reported able to make an artificial penis with a belt around the abdomen. It is not unusual for attempts at intercourse to enlarge the organ and an extreme case, even worse than that described, is reported by Max Huhner in "The Diagnosis and Treatment of Sexual Disorders in the Male and Female, Including Sterility and Impotence" (Philadelphia, F. A. Davis Company, 1937, p. 113). It is also possible by artificial means to enlarge and develop the organ to a remarkable degree.

MALARIAL BLOOD FROM PATIENT WITH DEMENTIA PARALYTICA FOR DEMENTIA PRAECOX

To the Editor:—Would it be inadvisable to take blood from a patient with dementia paralytica who has undergone the malarial treatment just before the treatment has been stopped and inject it into a patient who has dementia praecox? Would there be any possibility of the spirochete being still viable after the hyperpyrexia treatment and would there be any probability of transmitting the organism to the new patient?

M.D., North Dakota.

ANSWER.—There would be only slight danger that the blood from the patient with dementia paralytica would contain Spirochaeta pallida. This is not because the fever of the malaria kills spirochetes but because the blood of patients who have dementia paralytica contains few if any spirochetes.

The injection of malarial blood from a patient with dementia paralytica into a nonsyphilitic patient is, of course, open to criticism in the case in question because malarial therapy has been of no particular value in the treatment of patients with dementia praecox.

COITUS AFTER DELIVERY AND CURETTAGE

To the Editor:—What is the proper interval after which coitus may be permitted following a normal delivery? After cesarean section? After curettage? What risk is involved in premature resumption of coitus in such cases?

M.D., California.

ANSWER.—Coitus should not be indulged in before the patient is examined about six weeks after a baby is born. The reasons for this are that, before six or eight weeks following childbirth, involution of the genital organs is usually not complete and a repair of lacerations or an episiotomy may not be completely healed before this time. Furthermore, there is some likelihood of starting a flow of blood from the uterus before this time and also presumably there may be some risk of intrauterine infection from coitus. However, many couples indulge in coitus before a new-born baby is 6 weeks old and, aside from the discomfort experienced by the woman, serious consequences are seldom observed. The six weeks abstinence period applies to women who have had cesarean sections as well.

Following a curettage performed for diagnostic purposes in the absence of a pregnancy, there is no harm in indulging in coitus two weeks after the operation. However, if the curettement is performed for a condition of pregnancy such as therapeutic or incomplete abortion, it is best to have the patient avoid intercourse for at least four weeks to permit complete involution of the genitalia and to avoid the possibility of an intrauterine infection.

NECK INJURY AND COCCYGEAL PAIN—NERI TEST

To the Editor:—Is there an anatomic reason or sympathetic nerve connection that would cause pain in the area of the coccyx when there is some injury to the cervical spine? A man struck the back of his head just above the axis. A short time afterward pain developed in the area of the coccyx, although he never injured the lower part of his spine. This happened two years ago. The head, neck and coccygeal pains virtually disappeared, but lately the coccygeal pain has returned without any special cervical symptoms. A woman never had an injury of any kind. She has been noticing for the last month that on moving her neck, or when sitting in a chair with the head forward, she has pain in the area of the coccyx. Roentgenograms in both cases are negative.

M.D., New Jersey.

ANSWER.—There is no anatomic connection between the cervical region and the coccyx except through the cerebrospinal fluid. In the presence of arthritis with radiculitis, a spinal cord tumor or equina tumor, such acts as coughing, sneezing or straining at stool will increase the intraspinal pressure and aggravate the discomfort.

There is a test known by the name of Neri, which is called the nodding test, which is positive when simple nodding of the head increases intraspinal pressure and causes radicular pain.

PRURITUS IN PREGNANCY

To the Editor:—Can you give me information on the etiology and treatment of a generalized pruritus manifesting itself in the latter months of pregnancy? I have attended three sisters who have this condition in the latter months of pregnancy. The mother had similar trouble. There is no glycosuria. The itching, which is intense at times, is first noted in the feet and legs, then becoming generalized. It is immediately relieved after delivery. It would seem that the mothers were allergic to the products of conception. It is not an urticaria and is not relieved by ephedrine.

M.D., North Dakota.

ANSWER.—The cause of generalized pruritus in pregnancy is not definitely known but it is presumably related to the toxemias. H. Vignes (*Gynécologie* **36**:88 [Feb.] 1937) reported a series of forty-one cases of pruritus vulvae during pregnancy and fourteen cases of extragenital pruritus associated with gestation. He could not detect a common factor in these cases. Since the cause is not known, the treatment must be empirical. Patients may be relieved of their itching by local applications of equal parts of magnesia magna and olive oil. Oatmeal baths are also helpful in many cases. Three cups of cooked oatmeal in two quarts of water should be placed in a cloth bag securely tied at the top and placed in the bath water. These baths may be taken as often as desired.

STRYCHNINE AND ALCOHOL

To the Editor:—Is it true that the giving of strychnine with whisky is poison or vice versa? As one of the treatments for alcoholism is one-thirtieth grain (0.002 Gm.) of strychnine taken for ten days a good cure?

J. E. FRENCH, M.D., Holly Grove, Ark.

ANSWER.—The conclusions of Dr. Norris's studies are absolutely not applicable to the ordinary or therapeutic use of strychnine, as well as of whisky, although they do apply to almost lethal quantities of these substances. Strychnine (0.002 Gm.) may be used safely in the treatment of alcoholism.

NASAL SEPTUM OPERATION AND PACKING

To the Editor:—In the answer to a question in Queries and Minor Notes in the March 26, 1938, issue, entitled "Nasal Septum Operation Without Packing," I get the impression that you discourage the use of rubber tubing in each nostril to allow nasal breathing because the inspired air is not moistened by the nasal mucosa. But 90 per cent of a loaf is better than none. The real cause of discomfort from packing the nose is from mouth breathing, and the lack of moisture for so short a period is not noticed by the patient. If one insists on moist inspired air, this can be managed by directing steam from an inhalator toward the nose. Really, if one blocks the nose so that he could not breathe, I think he would be satisfied to forego the lack of moisture for twenty-four hours and have nasal breathing.

EMANUEL ROTH, M.D., Flushing, N. Y.

Medical Examinations and Licensure

COMING EXAMINATIONS

STATE AND TERRITORIAL BOARDS

ALABAMA: Montgomery, June 28. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

ARKANSAS: *Basic Science.* Little Rock, June 4. Sec., Mr. Louis E. Gebauer, 701 Main St., Little Rock. *Medical (Regular).* Little Rock, June 9-10 and Nov. 3-4. Sec., State Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Medical (Eclectic).* Little Rock, June 21. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Reciprocity.* San Francisco, May 11, Los Angeles, July 11, San Francisco, Sept. 14, and Los Angeles, Nov. 16. *Written examinations.* San Francisco, June 27-30, Los Angeles, July 11-14, and Sacramento, Oct. 17-20. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Basic Science.* New Haven, June 11. *Prerequisite to license examination.* Address State Board of Healing Arts, 1895 Yale Station, New Haven.

DELAWARE: Dover, July 12-14. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: *Basic Science.* Washington, June 27-28. *Medical.* Washington, July 11-12. Asst. Sec., Commission on Licensure, Mr. Paul Foley, 203 District Bldg., Washington.

FLORIDA: Jacksonville, June 13-14. Sec., Dr. William M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta, June. Joint Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

ILLINOIS: Chicago, June 28-July 1, and Oct. 18-20. Superintendent of Registration, Department of Registration and Education, Mr. Homer J. Byrd, Springfield.

INDIANA: Indianapolis, June 21-23. Sec., Board of Medical Registration and Examination, Dr. J. W. Bowers, 301 State House, Indianapolis.

KANSAS: Kansas City, June 7-8. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

KENTUCKY: Louisville, June 8-10. Sec., State Board of Health, Dr. A. T. McCormack, 620 S. 3rd St., Louisville.

MARYLAND: *Medical (Regular).* Baltimore, June 21-24. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Medical (Homeopathic).* Baltimore, June 21-22. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MICHIGAN: Ann Arbor and Detroit, June 13-15. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 202-3-4 Hollister Bldg., Lansing.

MISSISSIPPI: Jackson, June 22-23. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MISSOURI: St. Louis, June 2-4. Director, Medical Licensure, Dr. H. S. Gove, State Capitol Bldg., Jefferson City.

NEBRASKA: *Basic Science.* Omaha, May 3-4. *Medical.* Omaha, June 8-9. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEVADA: Carson City, May 2. Sec., Dr. John E. Worden, Capitol Bldg., Carson City.

NEW JERSEY: Trenton, June 21-22. Sec., Dr. James J. McGuire, 28 W. State St., Trenton.

NEW YORK: Albany, Buffalo, New York, and Syracuse, June 27-30 and Sept. 19-22. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, 315 Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 13. Sec., Dr. B. J. Lawrence, 503 Professional Bldg., Raleigh.

NORTH DAKOTA: Grand Forks, July 5-8. Sec., Dr. G. M. Williamson, 4½ S. 3rd St., Grand Forks.

OKLAHOMA: *Basic Science.* Oklahoma City, May 4. Sec. of State, Hon. Frank C. Carter, State Capitol Bldg., Oklahoma City. *Medical.* Oklahoma City, June 8-9. Sec., Dr. James D. Osborn, Jr., Frederick.

OREGON: *Basic Science:* Corvallis, July 16, and Portland, Nov. 19. Sec., State Board of Higher Education, Mr. Charles D. Bryne, University of Oregon, Eugene.

PENNSYLVANIA: Philadelphia and Pittsburgh, July. Sec., Board of Medical Education and Licensure, Dr. James A. Newpher, 400 Education Bldg., Harrisburg.

SOUTH CAROLINA: Columbia, June 28. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA: July 19-20. Director of Medical Licensure, Dr. B. A. Dyar, State Board of Health, Pierre.

TEXAS: San Antonio, June 20-22. Sec., Dr. T. J. Crowe, 918 Mercantile Bldg., Dallas.

VERMONT: Burlington, June 15-17. Sec., Board of Medical Registration, Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 22-24. Sec., Dr. J. W. Preston, 30½ Franklin Road, Roanoke.

WISCONSIN: Milwaukee, June 28-July 1. Sec., Dr. Henry J. Gramling, 2203 S. Layton Blvd., Milwaukee.

WYOMING: Cheyenne, June. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

NATIONAL BOARD OF MEDICAL EXAMINERS SPECIAL BOARDS

Examinations of the *National Board of Medical Examiners* and *Special Boards* were published in THE JOURNAL, April 23, page 1393.

Pennsylvania January Examination

Dr. James A. Newpher, secretary, Board of Medical Education and Licensure, reports the examination held at Philadelphia, Jan. 4-8, 1938. Twenty-seven candidates were examined, 25 of whom passed and 2 failed. The following schools were represented:

School	PASSED	Year Grad.
University of Georgia School of Medicine		(1934)
State University of Iowa College of Medicine		(1930)
University of Maryland School of Medicine and College of Physicians and Surgeons		(1936)
University of Minnesota Medical School		(1936)
Creighton University School of Medicine		(1936)
Columbia University College of Physicians and Surgeons		(1933), (1934)
New York Univ., University and Bellevue Hospital Med. College		(1934)
Eclectic Medical College, Cincinnati		(1936)
Ohio State University College of Medicine		(1936)
Jefferson Medical College of Philadelphia		(1935)
Temple University School of Medicine		(1935)
University of Pennsylvania School of Medicine		(1935, 2), (1936)
Woman's Medical College of Pennsylvania		(1936)
Vanderbilt University School of Medicine		(1932)
Marquette University School of Medicine		(1937)
University of Toronto Faculty of Medicine		(1921), (1935)
McGill University Faculty of Medicine		(1925)
Medizinische Fakultät der Universität Wien		(1935)*
Regia Università degli Studi di Padova. Facoltà di Medicina e Chirurgia		(1935)*
Licentiate of the Royal College of Physicians, of the Royal College of Surgeons, Edinburgh, and of the Royal Faculty of Physicians and Surgeons, Glasgow		(1936)
Université de Genève Faculté de Médecine		(1935)

School	FAILED	Year Grad.
College of Physicians and Surgeons of Baltimore		(1904)
Medizinische Fakultät der Universität Wien		(1936)

Eight physicians were licensed by reciprocity and seven physicians were licensed by endorsement on January 4 and January 20. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Washington University School of Medicine		(1933)	Missouri
New York University, University and Bellevue Hospital Medical College		(1927)	New York
University of Oregon Medical School		(1935)	Oregon
Temple University School of Medicine		(1936)	Ohio
University of Pennsylvania School of Medicine		(1927) (1936)	N. Carolina, Louisiana
University of Texas School of Medicine		(1924)	Texas
University of Virginia Department of Medicine		(1934)	Virginia

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Georgetown University School of Medicine		(1935), (1936)	N. B. M. Ex.
Northwestern University Medical School		(1933)	N. B. M. Ex.
Johns Hopkins University School of Medicine		(1934)	N. B. M. Ex.
Harvard University Medical School		(1933)	N. B. M. Ex.
University of Pennsylvania School of Medicine		(1935)	N. B. M. Ex.
University of Vermont College of Medicine		(1931)	N. B. M. Ex.

* License withheld pending completion of foreign credentials.

Book Notices

Reports on Chronic Rheumatic Diseases: Being the Third Annual Report of the British Committee on Chronic Rheumatic Diseases Appointed by the Royal College of Physicians. Number Three. Edited by C. W. Buckley, M.D., F.R.C.P. Cloth. Price, 10s. 6d.; $3.50. Pp. 131. London: H. K. Lewis & Co., Ltd.; New York: Macmillan Company, 1937.

This volume of reports, the third offered by the British committee, reviews recent investigations on joint disease and offers a critical survey of the present status of various forms of therapy. Throughout the reports there is in general a clear differentiation between that which is known and that which is unproved.

In a sane article on vaccines and rheumatoid arthritis, Okell discusses the rationale underlying vaccine treatment. He points out that it is not reasonable to treat with vaccine a disease the cause of which is unknown.

Reviewing the use of sympathectomy in arthritis, Learmonth finds relief of pain to be the most constant result, but the cause of the relief is not known. An article on roentgen therapy in chronic arthritis, contributed by Kahlmeter, gives a review of the results in the experience of other workers and of his own results in 4,000 cases. The most suitable types of cases and the limitations of the method are discussed. The evidence for the possible association of vitamin deficiencies as precipitating factors in rheumatic diseases is surveyed by Race in a valuable article on vitamins and rheumatic diseases. Two cases of neutrophil leukopenia, with enlargement of the liver and spleen in rheumatoid arthritis, are reported by Collins. Recent studies on the changes produced in joints by hypercalcemia, on the serum calcium, phosphorus and phosphatase in bone diseases, on the deposition of colloidal matter in the reticuloendothelial system about joints, and on the incidence, characteristics and course of Still's disease are reviewed briefly by Moncrieff. In a review of the recent results of chrysotherapy in arthritis, Tegner indicates the basis for his conclusion that this form of treatment is of benefit in rheumatoid arthritis, in spite of the dangers of complications. The summary of recent work on osteo-arthritis, by Clarke, presents briefly the factors that are responsible for the degenerative changes and the difficulties of treatment. In an article on diet in arthritis, Buckley reviews the results of the use of recently advocated diets. An

excellent review of recent American investigations by Hench covers the observations in the various types of joint disease. In discussing the value of sodium salicylate in the treatment of gout, Jennings indicates the appearances necessary for a diagnosis of gout and presents the comparative results of sodium salicylate and cinchophen treatment. The possible dangers resulting from the administration of such commonly used drugs as acetophenetidin, aminopyrine and cinchophen are presented clearly by Archer and Discombe. Brief abstracts of articles from the Italian, French and German literature are given by Bach and Pether.

The book is of value to all interested in present lines of investigation in joint disease and in the evaluation of various forms of treatment.

Tuberkulose: Ein Fortbildungskursus der Berliner Akademie für ärztliche Fortbildung im Tuberkulosekrankenhaus der Stadt Berlin "Waldhaus Charlottenburg." Herausgegeben von H. Ulrici, ärztlicher Direktor des Waldhauses Charlottenburg, und O. Koch, Prosektor am Waldhaus Charlottenburg. Unter Mitarbeit von G. Ballin et al. Paper. Price, 6.60 marks. Pp. 147, with 42 illustrations. Berlin: Julius Springer, 1937.

In this booklet the fundamentals of the pathology, epidemiology, diagnosis and treatment of the tuberculous lesions located in the various organ systems of the body are given in a short and precise manner. The theory of Ranke and its subsequent evolutions are discussed and chapters dealing with the influence of hereditary and constitutional factors, with the effect of associated diseases, age and pregnancy, are included. Pathologic, microscopic and serologic examinations and the results of other laboratory procedures such as blood counts, determination of the sedimentation rate, and tuberculin tests are evaluated. A chapter is devoted to the technic and usefulness of the functional test of the lung, with evaluation of the spirometric method. Tuberculosis in childhood, the indications and technic of collapse therapy and the indications for phrenic exeresis, thoracoplasty and pneumolysis are discussed. Separate chapters are devoted to tuberculosis of the larynx, bones, intestine and genito-urinary tract. The social problems, the problems of public health and effective tuberculosis prophylaxis are discussed. The printing of the book is well done, with excellent reproductions and sketches. While the book does not contain new points of view or original work, it will be a valuable addition to the library of the student, of the general practitioner and of the specialist as a source of quick orientation as to diagnosis and therapy.

Organization, Strategy and Tactics of the Army Medical Services in War. By T. B. Nicholls, M.B., Ch.B., Lieut.-Colonel Royal Army Medical Corps. With a foreword by Lieut.-General Sir James A. Hartigan, K.C.B., C.M.G., D.S.O., Director-General, Army Medical Services. Cloth. Price, $4. Pp. 372. Baltimore: William Wood & Company, 1937.

The medical service in modern warfare has enormous duties to perform. It must not only treat the wounded and the sick but must provide for them food, clothing, shelter, warmth, pay, discipline and transportation. This book seems to deal with every problem that a medical officer in the field may encounter. It is based largely on experience in the World War. Some of the terms used pertain especially to the British army and its medical service. In modern warfare it is essential to estimate before a battle the size of the medical problem that will develop. Before the World War it was calculated that 6 per cent of the force engaged in any one battle would become casualties. This estimate was far exceeded in France, where, in some battles, 20 per cent of the forces engaged became casualties in the first forty-eight hours and 40 per cent by the end of the first week. Assuming the strength of a division to be 20,000, the medical service has to prepare to deal with from 4,000 to 8,000 casualties in each division. In one battle in the World War the advance information was to prepare to care for 20,000 casualties; there were actually 60,000, or the equivalent of three entire divisions. Estimating that seventy-eight trains are required to move one division, 234 trains would have been required to move this number of casualties; and these passengers are patients, most of whom have to be carried to the trains. There is another problem of the greatest importance involved in a task so huge. It has been said that the side which can produce a last 100,000 men will win a war. This last 100,000 may be in the hospitals ready, or nearly ready, to be returned to duty. If the medical service is inefficient in returning men to the front as soon as possible, that might have much to do with winning or losing a war. Cron, an Austrian general, previous to the World War devised a formula with which to estimate the casualties in modern warfare. The Cron formula, the author says, as applied to many of the battles in France, gave average results not far from the mark. Cron estimated that only three fifths of a total force would be engaged in actual fighting and that 10 per cent of them would become casualties; so his formula is that the total number of casualties will be 10 per cent of three fifths of the total force, or 6 per cent. There is nothing certain in war, and no one formula could possibly give an accurate forecast of the casualties. The author discusses other methods of estimating the number of sick for whom the medical service must provide. He tabulates the approximate casualties in many engagements in the World War and figures the percentage in relation to the total force. He discusses the various medical units and their organization from the front line back to the base. He gives supply tables for the various units, showing the personnel required and the equipment. He discusses the considerations that enter into the location of the main dressing station, taking up such details as how many splints to provide for each unit, and how many stretchers and operating lamps. There never seems to be a sufficient number of stretchers in any large engagement; there should be a reserve of at least 300 for every division. There are chapters on ambulance trains, general hospitals, hospital ships, convalescent depots, depots of medical stores, lines of communication, organization of the base, strategy and tactics, and examination and promotion in the medical service.

Uric Acid in Blood and Urine. By Knud Brøchner-Mortensen. Paper. Price, 9 Danish kroner. Pp. 269, with 58 illustrations. Copenhagen: Levin & Munksgaard, 1937.

This book contains a comprehensive and critical review of methods for the determination of uric acid in blood serum and in urine. The author reports new methods of his own as well as suggestions for careful control of conditions in methods previously reported. A large series of analyses gives comparative results of the commonly used methods and of his methods. Studies of serum and the uric acid content of the urine for normal persons were performed, the results of which are reported in detail. Uric acid clearance studies, total daily excretion of uric acid and the effect of diet and of diuresis are all studied in detail. The mechanism of uric acid excretion is considered. All persons used for study were free from any disturbance of uric acid metabolism. The bibliography of nearly 400 references indicates the comprehensive nature of this book, which should be a useful work of reference for persons interested in metabolism of uric acid or in methods for its determination.

The Cerebrospinal Fluid. By H. Houston Merritt, M.D., Assistant Professor of Neurology, Harvard Medical School, Boston, and Frank Fremont-Smith, M.D. With a foreword by James B. Ayer, M.D. Cloth. Price, $5. Pp. 333, with 17 illustrations. Philadelphia & London: W. B. Saunders Company, 1937.

The literature on cerebrospinal fluid has become so voluminous in the last few years that it is hard for the average physician to get a clear picture of what is practical and what is theoretical. A book on the subject, particularly by men who have spent many years in studying the fluid, is therefore of great value. Both authors have had an enormous experience in the study of cerebrospinal fluid and have kept an accurate record of their cases, so that they can tell by actual numbers how many specimens of fluids in a certain disease showed changes and how many did not. The book covers almost every neurologic condition known. The general practitioner as well as the neurologist can therefore use the book with profit. There are a few criticisms, however, that might be leveled at the book, the most important of which is that the authors have been too set in their opinions. As a result, they omit mention of some pertinent information. For instance, in their admirable discussion of cerebrospinal fluid pressure they state that they use a certain water manometer but fail to mention the fact that there are other manometers on the market which are considered efficacious. While they devote some space to the "comparison of the measurement of pressure by mercury and water manometer" and justify the use of the latter, they do not mention that mercury and other manometers may be

used. They likewise fail to evaluate a good many tests that have been popular. For instance, no mention is made of the tryptophan test for tuberculous meningitis. Possibly the authors do not consider it reliable; but in a book on the subject one would expect some discussion as to its value or at least some mention of it. With regard to the Kahn test the authors do state their opinion that "most serologists are agreed that the various precipitation tests do not give as satisfactory results in the cerebrospinal fluid as in serum" (p. 61), but one might doubt the accuracy of this statement. In discussing the hydrogen ion concentration of the cerebrospinal fluid the authors submit a 1925 reference on the p_H of normal cerebrospinal fluid, whereas this was pointed out as early as 1917. This, however, may be ascribed to an oversight. Throughout the book a good deal of space is devoted to topics on which the authors have done special work. While this is forgivable, it results in a disproportionate emphasis on those subjects as compared to other subjects in which they did comparatively less work. The book fulfils the one purpose of the authors (as expressed in the foreword) to present facts, but it does not fulfil the other purpose to explain why some changes take place. In their desire to be practical the authors have at times neglected the theoretical or rather philosophic outlook of cerebrospinal fluid. As a whole, the book is practical and authoritative.

Textbook of Experimental Surgery. By J. Markowitz, M.B., Ph.D., M.S. in Exp. Surg., Research Associate, Department of Physiology, University of Toronto. Cloth. Price, $7. Pp. 527, with 330 illustrations. Baltimore: William Wood & Company, 1937.

Written in brief yet discursive and pleasant style, this short volume comprises a rapid introduction to the field of experimental surgery. The author maintains that the practical lessons in technic and physiology learned first hand on the laboratory animal is the surgeon's greatest asset. He asserts that many clinicians have much to learn of practical physiology of the "Bernardian" type and that less emphasis might be laid on highly theoretical chemical effects such as surround the problem of insulin. He lays much stress on actual surgical technic, detailing much space, for example, to the choice and method of suturing. Included also is a chapter on the antivivisection movement, in which the author advises constant vigilance against the fanatics and the ill informed. The chief virtue of this book lies in the fact that the author works from the assumption that his readers know little about practical surgery. Therefore he submits physiologic explanations for even the most simple steps in any procedure. This, coupled with the patient detail in illustration, lends much value to the short textbook, which should be appreciated especially by the postgraduate student in surgery.

Arteriovenous Aneurysm: Abnormal Communications Between the Arterial and Venous Circulations. By Emile Holman, A.B., B.A., M.D., Professor of Surgery, Stanford University Medical School, San Francisco, California. Cloth. Price, $5. Pp. 244, with 79 illustrations. New York: Macmillan Company, 1937.

This monograph, dealing with arteriovenous aneurysms of various types, is a spendid example of the value of experimental work in the clarification of clinical problems. Details of laboratory procedures for the establishment of arteriovenous fistula in animals are given and the physiologic reasons for development of the various symptoms are explained in detail. By various experiments the author proves that the sudden drop in blood pressure following establishment of an arteriovenous aneurysm is due to an increase in blood volume and that recovery of the pressure to normal after closure of the fistula is enhanced by dilution of the blood by incoming plasma. The cardiac output is found to be increased as much as twofold in arteriovenous fistula. The cardiac hypertrophy which results after a large fistula has been present for some time is discussed in detail; the rapid subsidence of this hypertrophy following repair (as depicted by x-ray and clinical means) is readily explainable on the basis that the cardiac load imposed by the fistula has been eliminated. Methods of repair of the accessible fistulas, after the principle laid down originally by Matas, are discussed in detail. Sufficient data are presented to prove rather conclusively the advocacy of ligating the vein simultaneously with the artery whenever ligation is the procedure of choice. The various procedures for the treatment of intracranial fistulas are discussed in detail. This portion of the monograph is particularly valuable because the author has clearly demonstrated that the fatal results of immediate ligation of the internal carotid artery can be eliminated by trial ligation and digital compression. Important points in the treatment of congenital fistulas, such as the elimination of all the fistulous channels, are properly emphasized. Two separate chapters are devoted to a consideration of patent ductus arteriosus and congenital intracardiac fistulas. The last seventy-five pages consist of protocols of patients and animal experiments dealing with the various types of fistulas. An adequate bibliography is an attractive feature of the monograph. It is doubtful whether the reader will find the various features of arteriovenous fistulas discussed elsewhere in the medical literature with as much clarity and consideration of the physiologic principles involved. The book will therefore be of great value to the neurologic surgeon as well as to the general surgeon even though such fistulas are relatively uncommon. The publishers have chosen a good grade of paper and type, which are conducive to easy reading.

Medical Uses of Radium: Summary of Reports from Research Centres for 1936. Medical Research Council, Special Report Series, No. 226. Paper. Price, 1s. Pp. 41, with 6 illustrations. London: His Majesty's Stationery Office, 1937.

This report continues the accounts of fourteen similar earlier reports on the use of radium under the supervision of the Medical Research Council. It discusses results of purely experimental work as well as of the treatment of cancer in a number of hospitals under the direction of local committees. There are sections on cancer of the breast, the uterus, the mouth, nasopharynx, larynx and esophagus and the rectum, on sarcoma, on teleradium therapy and on nonmalignant conditions. The report will interest particularly specialists in the treatment of cancer.

Phenomenon of Local Tissue Reactivity and Its Immunological, Pathological and Clinical Significance. By Gregory Shwartzman, M.D., Bacteriologist, Mount Sinai Hospital, New York. Foreword by Jules Bordet, M.D. Cloth. Price, $7.50. Pp. 461, with 68 illustrations. New York: Paul B. Hoeber, Inc., 1937.

Shwartzman has rendered an important service to medical science in bringing together and correlating in monograph form the extensive studies on his phenomenon of local skin reactivity (Shwartzman phenomenon) accumulated during the past decade. The first ten of the thirteen chapters of the volume deal with laboratory investigative aspects of the phenomenon, while in the last three chapters the author attempts to correlate his phenomenon with related phenomena in pathology and immunity, discussing particularly the significance of the phenomenon and its clinical application. The latter is in the experimental stage, and definite procedures of diagnostic and curative value, based on the Shwartzman phenomenon, are yet to be established. The phenomenon is of dramatic interest. If a small amount of bacterial filtrate is injected into the skin of a rabbit, a slight inflammatory reaction will appear in the area of injection in about twenty-four hours. If at about that time the animal is injected intravenously with the same bacterial filtrate or with some other bacterial filtrate or indeed with reagents of nonbacterial origin, the mild inflammatory area in the skin undergoes hemorrhagic necrosis in a few hours. The "preparatory" skin injection must be made with a substance of bacterial origin, while the "provocative" intravenous injection does not have to be made with a substance of bacterial origin. Schwartzman argues that he is dealing in this phenomenon with a new category of toxins and antitoxins and that his phenomenon is entirely distinct from the phenomena of anaphylaxis and tissue hypersensitiveness. In connection with the Arthus reaction, he states on page 352: "All the evidence considered together sharply differentiates the phenomenon of local tissue reactivity described in this monograph from . . . the Arthus phenomenon"; yet forty pages later (p. 391) he states that "the necrotic and hemorrhagic reactions of the Arthus phenomenon in man belong at least in part to the domain of the phenomenon of local tissue reactivity." Even though one may not agree with Shwartzman's interpretation of his phenomenon, the fact remains that the monograph is a provocative contribution to the medical sciences.

A Manual of Obstetrics. By Thomas Watts Eden, M.D., C.M., F.R.C.P., Consulting Obstetric Physician to Charing Cross Hospital, and Eardley Holland, M.D., B.S., F.R.C.P., Obstetric and Gynæcological Surgeon, The London Hospital. Eighth edition. Cloth. Price, 24s. Pp. 765, with 410 illustrations. London: J. & A. Churchill, Ltd., 1937.

The appearance of the eighth edition of this standard textbook of obstetrics is proof of its popularity. Many chapters have been completely rewritten, others have been changed, and all of the material has been brought abreast of the times. Many new illustrations help to clarify the text and make the book more instructive to students and practitioners. The logical arrangement of the subject matter into eight parts is conducive to greater usefulness as a teaching textbook. All the subjects of interest in this special field are covered completely but rather briefly, thereby making it possible to confine the material within the limited number of small pages. The treatments suggested are for the most part conservative and represent accepted opinion. A few key references are listed at the end of each chapter, which with few exceptions pertain largely to the English literature. A unique innovation consists of brief summaries after most of the references. There is always room for differences of opinion with regard to certain ideas of practice. Thus, one may take specific exception to the discussion on manual dilation of the cervix. This method, like accouchement forcé, should no longer be considered good practice. The cervix cannot be regarded as an elastic ring which can be stretched like a rubber band. Too many grave sequelae have followed this apparently simple procedure. In the treatment of eclampsia, saline infusions are usually considered contraindicated and dangerous. Present knowledge favors the use of hypertonic solutions of dextrose. Poultices to the loins have fallen into complete therapeutic discard. The discussion on the treatment of placenta praevia is excellent and deserves commendation. The same may be said for the rational approach to the treatment of puerperal infection.

Macleod's Physiology in Modern Medicine. Edited by Philip Bard, Professor of Physiology, Johns Hopkins University School of Medicine, Baltimore, et al. Eighth edition. Cloth. Price, $8.50. Pp. 1051, with 355 illustrations. St. Louis: C. V. Mosby Company, 1938.

It has become increasingly difficult for any one man to write a comprehensive advanced textbook of physiology. In recognition of this fact, Professor Bard has enlisted the collaboration of eight colleagues in the preparation of this edition of a well established textbook. This destroys to some extent the individuality of any book but the student is unquestionably the gainer in that each section has been prepared with more care. In the preface the editor justifies the omission of the section on "The Physicochemical Basis of Physiological Processes" on the assumption that the student will have become familiar with this material in other courses—an assumption of questionable validity. Experience with large numbers of students shows that most of them need ready at hand some reference to fundamental laws and processes. While the text throughout is written in clear, lucid style, students are inclined to object that one must read too much material in order to garner a few facts. Objection is made also to the extensive use of small type, which, the editor explains, covers four kinds of material: "descriptions of methods; data judged to be of secondary interest to the student but necessary for a full understanding of the subject under discussion; treatment of matters that are at present largely controversial; and finally considerations which are chiefly of clinical interest." The illustrations are well selected and well integrated with the text. However, as in the previous edition, reproductions of photographs are often inexcusably poor. This is the most serious defect in the book. Of the textual material perhaps the section on metabolism and nutrition is the least attractive. Particularly the chapters on vitamins, on mineral metabolism and on nutrition are, in view of the importance these subjects have come to assume more recently, unjustifiably conventional and sketchy. The section on the endocrines is greatly improved over that appearing in the previous edition, but even here there is something of a conventionalized approach which one scarcely expects in a newly written work. The section on respiration seems to represent perhaps the best presentation of subject matter. Especially to be commended is the chapter on internal respiration, as it carries material that has not been so adequately discussed in any other work. The discussion of auditory and labyrinthine mechanisms seems unduly limited. Aside from the instances mentioned, the proportionate allotment of space to the various sections seems well balanced. Thorough acquaintance with the text as a whole will give the student a well balanced conception of the important fundamentals of physiology.

Creative Camera Art. By Dr. Max Thorek, F.R.P.S., F.R.S.A., K.L.H., President, Photographic Society of America. Cloth. Price, $3.75. Pp. 156, with illustrations. Canton, Ohio: Fomo Publishing Company, 1937.

A relatively simple way of making an acceptable photograph from a snapshot is first to have an enlargement made. On this the shadows may be strengthened and dark areas added by means of a pencil. A contact print made from the enlargement will have the black and white in reverse, so that pencil marks will appear light when the final print is made. Thus it is possible during the process to add both light and shade where they will do the most good. Dr. Thorek describes the technic of picture making and discusses the creative side up to the point at which the individual worker must think for himself. Numerous illustrations show the effects that can be introduced at different stages of the paper negative process, and there are magnificent reproductions of portrait studies, genre and landscapes.

Diagnostics urgents. Abdomen. Par H. Mondor, professeur agrégé à la Faculté de Paris. Fascicules 1 et 2. Third edition. Cloth. Price, 210 francs per set. Pp. 524; 527-1119, with 248 illustrations. Paris: Masson & Cie, 1937.

The popularity of this treatise on diagnosis of acute conditions within the abdomen is best proved by the fact that only four years elapsed between the second and the present edition. Contrary to the prevailing custom the book has been only slightly enlarged: seventy-three pages more than the second edition; what is still more surprising, the number of illustrations has been cut, apparently without detracting from the value of the book. A cursory perusal of the voluminous two parts failed to reveal any signs of a considerable revision. The colloquial style and numerous case histories are responsible for the large size of the work, certainly an undesirable feature of a book of this type, which should serve as a guide in emergency cases. It seems that not enough attention has been paid to the laboratory studies, frequently invaluable in the differential diagnosis of acute abdominal conditions. Such minor criticisms do not detract from the value of this exhaustive and comprehensive work, which should be of interest to every man practicing abdominal surgery.

Eighth International Congress of Military Medicine and Pharmacy and Meetings of the Permanent Committee, Brussels, Belgium, June 27-July 3, 1935. Report of Captain William Seaman Bainbridge, M. C-F., Member of the Permanent Committee for the Delegation of the United States of America. Department of State, Publication 1069, Conference Series 32. Cloth. Price, $1. Pp. 114, with 3 illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1937.

The late King Albert of Belgium and Queen Elizabeth created the first International Congress of Military Medicine and Pharmacy in 1921. Since then there have been meetings every second year in various large cities in Europe, at which representatives of numerous countries have met to study the problems of military medicine and surgery and to concern themselves with the alleviation of suffering in possible future wars. Capt. William Bainbridge, U. S. Naval Reserve, retired, who has attended each of the eight conferences as an official delegate of the United States government or unofficially at his own expense, has reported each one of these congresses. In the present report there is a foreword by Charles R. Reynolds, Surgeon-General, U. S. Army. The congress is organized in two main sections: (1) the International Office of Medico-Military Documentation and (2) the Medico-Legal Commission, which is forming an association for the international protection of humanity, with headquarters at Monaco. A list is given of the official delegates to the eighth congress from the various countries represented. There were ten official delegates listed from the United States. The remainder of the small volume comprises the report of the various meetings and abstracts of

the addresses. Among the subjects discussed were the determination of fitness for the different specialties in armies, navies and air forces, post-traumatic conditions of the abdomen, the standardization of methods of analysis of foodstuffs for military use, buccodental services at the front, principles of organization and functioning of medical services in mountain warfare, and the functions of the administrative medical services of the armies, navies and air forces. A comparatively brief account of this congress was published in THE JOURNAL, Oct. 16, 1937, page 1292, in the Belgium letter.

Synopsis of Obstetrics and Gynæcology. By Aleck W. Bourne, M.A., M.B., B.Ch., Consulting Obstetric Surgeon, Queen Charlotte's Hospital, London. Seventh edition. Cloth. Price, $4. Pp. 452, with 175 illustrations. Baltimore: William Wood & Company, 1937.

Bourne's seventh revision draws much of the material from standard textbooks. Because of his familiarity with the essential needs of the student and along with his vast clinical experience, he has been able to incorporate this material into a clear, concise, handy volume that is presented in an easily readable manner. This book is also intended for setting forth the significant points in reviewing for examinations in obstetrics and gynecology. The chapters covering the anatomy and physiology of pregnancy are concise, though not at the expense of clarity. The toxemias of pregnancy are discussed clearly and with modern conceptions. Eclampsia is treated along definitely conservative lines. The chapters on postpartum hemorrhage and puerperal infection are commendatory. The book should contain more illustrative diagrams. The application of forceps is described only with the patient in the left lateral position. For the benefit of the American readers of this book, it might have been well to give a description of forceps application with the patient in the dorsal position. The estrogenic and gonadotropic factors and their relation to menstruation, puberty, the menopause and menstrual disturbances are gone into pointedly with many practical suggestions. The book is well correlated and can be wholeheartedly recommended for both the student and the practitioner. The author has well succeeded in his effort.

The Subnormal Mind. By Cyril Burt, M.A., D.Sc., Professor of Psychology, University of London. University of London Heath Clark Lectures, 1933, delivered at the London School of Hygiene and Tropical Medicine. Second edition. Cloth. Price, $5. Pp. 372. New York & London: Oxford University Press, 1937.

Eight lectures cover, in addition to a brief account of normal psychology, Burt's interpretations of the mentally deficient, the dull or backward child, the delinquent and the neurotic school child. The neuroses are dealt with, in general, in two more lectures. The book is a summary of abnormal psychology as visualized by a psychologist of wide training and a leader in his field. The psychiatrist, although differing with some of the views expressed, will find much of value in this comprehensive but somewhat discursive book. A second edition has been called for in two years. It differs from the first in minor corrections and the addition of free association test material in the appendix.

A Primer for Diabetic Patients: An Outline of Treatment for Diabetes with Diet, Insulin and Protamine Zinc Insulin, Including Directions and Charts for the Use of Physicians in Planning Diet Prescriptions. By Russell M. Wilder, M.D., Ph.D., F.A.C.P., Professor and Chief of the Department of Medicine of the Mayo Foundation, University of Minnesota. Sixth edition. Cloth. Price, $1.75. Pp. 191, with 4 illustrations. Philadelphia & London: W. B. Saunders Company, 1937.

The present edition of this manual for patients was issued primarily because of its need with regard to treatment with protamine zinc insulin. It gives the patient and the physician a good general outline as to how to proceed in changing from old to new insulin. In this respect it is a valuable help and guide. The field is well covered and the manual as a whole gives a good and reasonable type of information to the patient. At the end of each chapter there is a series of questions covering the chapter and in order to answer these the patient has to have the grasp of the contents. This is a good type of instruction, not the ordinary parrot type of learning. This being the sixth edition, the author has had ample opportunity to make changes in the text, so that the present volume is the crystallization of the subject as applied in practice.

The Structure and Composition of Foods. By Andrew L. Winton, Ph.D., and Kate Barber Winton, Ph.D. Volume III: Milk (Including Human), Butter, Cheese, Ice Cream, Eggs, Meat, Meat Extracts, Gelatin, Animal Fats, Poultry, Fish, Shellfish. Cloth. Price, $8. Pp. 524, with 11 illustrations. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Limited, 1937.

In this volume, which is devoted exclusively to foods of animal origin, the Wintons have continued their excellent summaries of the microscopic structure and the chemical composition of foods. The present volume takes up milk and its products, eggs, meat, poultry, fish and shell fish. In addition to a discussion of the chemical composition and properties of each food and each component, there are brief but thorough discussions of the influence of various methods of production and manufacture on the composition of foods. Copious references to the original literature and a suitable index enhance the usefulness of the book. This volume will take its place with the others in the series as an indispensable reference work for those who deal with the technical aspects of foods.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Act: Dermatitis Following Abrasion an Accidental Injury.—In the course of his employment in a woolen mill the workman repaired machinery and from time to time received bruises and abrasions on his hands. He became incapacitated by reason of a dermatitis caused, in the opinion of a physician, by oil, grease, dirt and bacteria coming in contact with such an abrasion on one of his hands. The industrial accident commission of Maine awarded him compensation under the workmen's compensation act and his employer appealed to the Supreme Judicial Court of Maine.

The employer's defense to the claim for compensation seemed to have been based on the theory that because the workman was unable to tell with exactness just when the particular abrasion was suffered and because such slight injuries were received almost daily and were dismissed by the workman when received as trifling, it was therefore a mere incident of his employment and not an "accident" within the meaning of the Maine workmen's compensation act. The Supreme Judicial Court, however, believed that there was sufficient evidence to warrant the industrial accident commission in finding that the dermatitis was caused by the entry of bacteria through an abrasion on his hand. That the abrasion itself was of such small consequence that the workman did not remember the exact time when it was received was unimportant, in the opinion of the court. In arriving at its conclusion the court cited *Brintons, Limited,* v. *Turvey,* A. D. 1905, 230, an English case in which compensation was awarded for the death of an employee from anthrax, the germ of which entered his system through an abrasion in the corner of his eye. The court also cited *Brodin's Case,* 124 Me. 162, 126 A. 829, in which a workman who contracted typhoid fever from drinking contaminated water furnished by his employer was awarded compensation. The court in the present case could see no distinction between the entry of typhoid bacteria through the mouth, as in Brodin's case, of the bacillus of anthrax as in the English case, and the case under consideration. Accordingly the award of compensation in favor of the workman was affirmed.—*Bearor's Case (Me.), 193 A. 923.*

Malpractice: Proof of Causal Relation Between Injury and Alleged Malpractice Necessary.—The plaintiff, injured in an automobile accident on the evening of March 30, 1935, was taken to a hospital in a semiconscious and partially paralyzed condition. The defendant, as attending physician, made, it was alleged, only a casual examination of the plaintiff, stating that he was merely shaken up. Thirty-six hours later the defendant permitted the plaintiff to be removed from the hospital, at which time the relationship of physician and patient seems to have ended. Thereafter, on April 12, the plaintiff was taken to another hospital, where there was discovered a dis-

location of the fifth cervical vertebra that had resulted in a compression fracture of the sixth cervical vertebra and a fracture of the pedicle lamina arches. The then attending physician undertook by traction to repair the damage but, owing to the condition and location of the injury, found it was impossible to do so. Subsequently the plaintiff brought suit against the defendant for malpractice. At the conclusion of the plaintiff's evidence the trial court entered a judgment of nonsuit and the plaintiff appealed to the Supreme Court of North Carolina.

To justify the submission of a malpractice suit to a jury, said the court, there must be evidence tending to show that the patient was injured, that the physician was negligent in the manner in which he examined and treated his patient or in his failure to render proper treatment, and that such negligent conduct was the proximate cause of the injury sustained by the patient. The burden rested on the plaintiff to prove a causal connection between his injury and the alleged negligent conduct of the defendant. All the medical expert witnesses agreed that it is risky to subject a patient to a thorough examination when he is under severe shock and that the attending physician must exercise his best judgment in determining when it is safe to make such examination. No witness testified that the plaintiff's condition was aggravated by the delay in efforts to reset the bone or that the inability to reset the bone was due to any condition arising from the delay. The evidence disclosed that the use of modern equipment and methods by trained and skilful physicians at a time when callus had not developed sufficiently to interfere with proper setting of the bone had availed nothing. The character and location of the fracture were such that proper traction could not be successfully used. Unfortunately, the plaintiff suffered an injury that could not be relieved except by the performance of a most dangerous operation. The plaintiff's unfortunate condition, in the opinion of the court, did not result from any negligent conduct of the defendant. The judgment of nonsuit was therefore affirmed.—*Gower v. Davidian (N. C.), 193 S. E. 28.*

Contraceptive Devices: Importation of Vaginal Pessaries.—Section 305(a) of the Tariff Act of 1930 provides, in part:

> All persons are prohibited from importing into the United States from any foreign country . . . any article whatever for the prevention of conception or for causing unlawful abortion.

The claimant, a physician of New York specializing in gynecology, imported a package containing 120 vaginal pessaries from Japan. The United States filed a libel for the forfeiture of the package, contending that its importation was prohibited by the section of the Tariff Act of 1930 quoted. The United States district court for the seventh district of New York dismissed the libel (13 F. Sup. 334) and the government appealed to the circuit court of appeals, second circuit.

The question before the court was whether physicians who import vaginal pessaries in order to use them for the health of their patient are excepted by implication from the literal terms of the tariff act. In the opinion of the court, the act embraces only such articles as Congress would have denounced as immoral if it had understood all the conditions under which they were to be used. The design of the act was not to prevent the importation, sale or carriage by mail of things which might intelligently be employed by conscientious and competent physicians for the purpose of saving life or promoting the well-being of their patients. While it is true, said the court, that the policy of Congress has been to forbid the use of contraceptives altogether if the only purpose of using them is to prevent conception in cases in which it would not be injurious to the welfare of the patient or her offspring, it is going far beyond such a policy to hold that abortions, which destroy incipient life, may be allowed in proper cases, and yet that no measures may be taken to prevent conception even though a likely result would be to require the termination of pregnancy by means of an operation. It seemed to the court unreasonable to suppose that the national scheme of legislation involves such inconsistencies and requires the complete suppression of articles the use of which in many cases is advocated by such a weight of authority in the medical world. The court, therefore, affirmed the decree of the district court dismissing the libel.—*United States v. One Package, 86 F. (2d) 737.*

Society Proceedings

COMING MEETINGS

American Medical Association, San Francisco, June 13-17. Dr. Olin West, 535 North Dearborn St., Chicago, Secretary.

American Academy of Pediatrics, Del Monte, Calif., June 9-11. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Academy of Tuberculosis Physicians, San Francisco, June 17-18. Dr. Arnold Minnig, 638 Metropolitan Bldg., Denver, Secretary.

American Association of Genito-Urinary Surgeons, Atlantic City, N. J., May 2-4. Dr. Henry L. Sanford, 1621 Euclid Ave., Cleveland, Secretary.

American Association of Industrial Physicians and Surgeons, Chicago, June 6-9. Dr. Volney S. Cheney, Armour and Company, Union Stock Yards, Chicago, Secretary.

American Association of Medical Milk Commissions, San Francisco, June 13-14. Dr. Paul B. Cassidy, 2037 Pine St., Philadelphia, Secretary.

American Association of Pathologists and Bacteriologists, Atlantic City, N. J., May 3-4. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American Association of the History of Medicine, Atlantic City, N. J., May 2. Dr. E. J. G. Beardsley, 1919 Spruce St., Philadelphia, Secretary.

American Dermatological Association, Del Monte, Calif., June 9-11. Dr. Fred D. Weidman, 36 Hamilton Walk, Philadelphia, Secretary.

American Gastro-Enterological Association, Atlantic City, N. J., May 2-3. Dr. Russell S. Boles, 1901 Walnut St., Philadelphia, Secretary.

American Gynecological Society, Asheville, N. C., May 30-June 1. Dr. Richard W. TeLinde, 11 East Chase St., Baltimore, Secretary.

American Heart Association, San Francisco, June 10-11. Dr. Howard B. Sprague, 50 West 50th St., New York, Secretary.

American Laryngological Association, Atlantic City, N. J., May 2-4. Dr. James A. Babbitt, 1912 Spruce St., Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, N. J., Apr. 27-29. Dr. C. Stewart Nash, 277 Alexander St., Rochester, N. Y., Secretary.

American Medical Women's Association, San Francisco, June 12-14. Dr. Helen A. Cary, 1634 N.E. Halsey St., Portland, Ore., Secretary.

American Neurological Association, Atlantic City, N. J., May 2-6. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.

American Ophthalmological Society, San Francisco, June 9-11. Dr. Eugene M. Blake, 303 Whitney Ave., New Haven, Conn., Secretary.

American Orthopedic Association, Atlantic City, N. J., May 3-5. Dr. Ralph K. Ghormley, 110 Second Ave. S.W., Rochester, Minn., Secretary.

American Pediatric Society, Bolton Landing, N. Y., June 9-11. Dr. Hugh McCulloch, 325 North Euclid Ave., St. Louis, Secretary.

American Proctologic Society, San Francisco, June 11-13. Dr. Curtice Rosser, 710 Medical Arts Bldg., Dallas, Texas, Secretary.

American Psychiatric Association, San Francisco, June 6-10. Dr. W. C. Sandy, State Education Bldg., Harrisburg, Pa., Secretary.

American Radium Society, San Francisco, June 13-14. Dr. F. W. O'Brien, 465 Beacon St., Boston, Secretary.

American Rheumatism Association, San Francisco, June 13. Dr. Loring T. Swaim, 372 Marlborough St., Boston, Secretary.

American Society for Clinical Investigation, Atlantic City, N. J., May 2. Dr. J. M. Hayman Jr., 2065 Adelbert Road, Cleveland, Secretary.

American Society of Clinical Pathologists, San Francisco, June 9-11. Dr. A. S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Surgical Association, Atlantic City, N. J., May 2-4. Dr. Charles G. Mixter, 319 Longwood Ave., Boston, Secretary.

Association for the Study of Allergy, San Francisco, June 9-10. Dr. J. Harvey Black, 1405 Medical Arts Bldg., Dallas, Texas, Secretary.

Association for the Study of Internal Secretions, San Francisco, June 13-14. Dr. E. Kost Shelton, 921 Westwood Blvd., Los Angeles, Secretary.

Association of American Physicians, Atlantic City, N. J., May 3-5. Dr. Hugh J. Morgan, Vanderbilt University Hospital, Nashville, Tenn., Secretary.

California Medical Association, Pasadena, May 9-12. Dr. F. C. Warnshuis, 450 Sutter Street, San Francisco, Secretary.

Congress of American Physicians and Surgeons, Atlantic City, N. J., May 3-4. Dr. John T. King Jr., 1210 Eutaw Place, Baltimore, Secretary.

Connecticut State Medical Society, Groton, June 1-2. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

District of Columbia, Medical Society of the, Washington, May 4-5. Dr. C. B. Conklin, 1718 M St. N.W., Washington, Secretary.

Florida Medical Association, Miami, May 9-11. Dr. Shaler Richardson, 111 W. Adams St., Jacksonville, Secretary.

Hawaii Territorial Medical Association, Honolulu, May 20-22. Dr. Douglas B. Bell, Dillingham Bldg., Honolulu, Secretary.

Illinois State Medical Society, Springfield, May 17-19. Dr. Harold M. Camp, Lahl Bldg., Monmouth, Secretary.

Iowa State Medical Society, Des Moines, May 11-13. Dr. Robert L. Parker, 3510 Sixth Ave., Des Moines, Secretary.

Kansas Medical Society, Wichita, May 9-12. Mr. C. G. Munns, 112 West Sixth St., Topeka, Executive Secretary.

Louisiana State Medical Society, New Orleans, May 2-4. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, Apr. 26-27. Dr. Walter Dent Wise, 1211 Cathedral St., Baltimore, Secretary.

Massachusetts Medical Society, Boston, May 31-June 2. Dr. Alexander S. Begg, 8 The Fenway, Boston, Secretary.

Missouri State Medical Association, Jefferson City, May 2-4. Dr. E. J. Goodwin, 634 N. Grand Blvd., St. Louis, Secretary.

National Tuberculosis Association, Los Angeles, June 20-23. Dr. Charles J. Hatfield, 7th and Lombard Sts., Philadelphia, Secretary.

New Hampshire Medical Society, Manchester, May 17-18. Dr. Carleton R. Metcalf, 5 South State St., Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, May 17-19. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New Mexico Medical Society, Santa Fe, June 6-8. Dr. L. B. Cohenour, 219 West Central Ave., Albuquerque, Secretary.

New York, Medical Society of the State of, New York, May 9-12. Dr. Peter Irving, 2 East 103d St., New York, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, May 2-4. Dr. T. W. M. Long, Roanoke Rapids, Secretary.

North Dakota State Medical Association, Bismarck, May 16-18. Dr. Albert W. Skelsey, 20½ North Broadway, Fargo, Secretary.

Ohio State Medical Association, Columbus, May 11-12. Mr. C. S. Nelson, 79 East State St., Columbus, Executive Secretary.
Oklahoma State Medical Association, Muskogee, May 9-11. Dr. L. S. Willour, Third and Seminole, McAlester, Secretary.
Rhode Island Medical Society, Providence, June 1-2. Dr. Guy W. Wells, 124 Waterman St., Providence, Secretary.
Society of Surgeons of New Jersey, Hackensack, May 25. Dr. Walter B. Mount, 21 Plymouth St., Montclair, Secretary.
South Carolina Medical Association, Myrtle Beach, May 17-19. Dr. E. A. Hines, Seneca, Secretary.
South Dakota State Medical Association, Huron, May 9-11. Dr. Clarence E. Sherwood, 102½ Egan Ave. S., Madison, Secretary.
Texas State Medical Association of, Galveston, May 9-12. Dr. Holman Taylor, 1404 West El Paso St., Fort Worth, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers in continental United States and Canada for a period of three days. Periodicals are available from 1927 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them. Titles marked with an asterisk (*) are abstracted below.

Alabama Medical Association Journal, Montgomery

7: 281-320 (Feb.) 1938

Contraception: Part I. Sociologic Aspects. C. L. Lamar, Birmingham. —p. 281.
Id.: Part II. Technic of Contraception. L. F. Turlington, Birmingham. —p. 287.
Tuberculosis as I Have Found It. J. G. Daves, Cullman.—p. 291.
Syphilis: Some Observations and Conclusions Drawn from Administration of 120,600 Antisyphilitic Treatments to 4,560 Patients. J. P. Robertson, Birmingham.—p. 293.
Rupture of Ventral Hernia by Trauma: Case Report. J. S. Camp and R. J. Sherer, Jasper.—p. 297.

American Journal of Public Health, New York

28: 117-240 (Feb.) 1938

Health Education for the Millions. L. I. Dublin and H. N. Calver, New York.—p. 117.
*Scarlet Fever Immunization with Formalized Toxin: Preliminary Report. G. W. Anderson, Boston.—p. 123.
Result of Active Immunization of Nurses Against Scarlet Fever. E. H. Place, Boston.—p. 137.
Sanitary Aspects of Air Conditioning. C. P. Yaglou, Boston.—p. 143.
Standard Agar Counts as Compared with Counts on Improved Agars at 32 C. M. W. Yale, Geneva, N. Y.—p. 148.
Syphilis Control in Industry. R. R. Sayers, Washington, D. C.—p. 155.
*Comparative Methods of Diagnosis of Rabies in Animals. C. N. Leach, Montgomery, Ala.—p. 162.
Tuberculosis Among Children and Young People in Cattaraugus County, N. Y. J. H. Korns, Olean, N. Y.—p. 167.
Use of Dishwashing Machines: Pasteurization of Eating Utensils. W. C. Cox, Washington, D. C.—p. 174.
Role of Nurse in Control of Syphilis and Gonorrhea. Gladys L. Crain, Boston.—p. 181.
Suggested Program of Control of Amebiasis by Health Departments. C. F. Craig, New Orleans.—p. 187.

Scarlet Fever Immunization with Formalized Toxin.—Anderson points out that preliminary Dick tests were given to more than 14,000 children, of whom 63 per cent have been found positive. Of those who began the immunizing injections, 8,212 received the complete course of three injections of formalized toxin. All children to whom formalized toxin was administered had been found to be susceptible as determined by a previous Dick test, usually performed the day before the first dose of antigen was given. More than 80 per cent of those injected were rendered Dick negative. Subsequent studies in communities failed to bear out these early institutional results, nor were the later results in institutions as favorable. Retests show that approximately 50 per cent of those injected have been rendered Dick negative. Anything more exact than this generalization would be unwarranted as the variations between communities and within the same community have been too great, ranging from 21 to more than 60 per cent. Retest of a small group of children given a second course of injections after being found Dick positive subsequent to the first series of injections showed that more than 90 per cent of these children were rendered Dick negative. The figures are too small to be significant but raise a reasonable question as to the added protection which might accrue from further injections of formalized toxin. It is impossible to advance any significant data as to the duration of immunity induced by formalized toxin. Institutional data, however, show no significant tendency to relapse to a Dick positive reaction. Reactions following the administration of the formalized toxin have been so mild that there has been as hearty an acceptance of this immunizing procedure as has been accorded to diphtheria immunization in the same communities.

Methods of Diagnosis of Rabies in Animals.—Leach states that the mouse technic of Webster and Dawson for confirming the diagnosis of rabies in animals as practiced in his laboratory is as follows: Material, when not examined fresh, is preserved in full strength glycerin. A small portion of Ammon's horn is ground up in a sterile mortar and nine parts of hormone broth added to one part of ground brain material. This is thoroughly emulsified and then centrifuged at from 2,000 to 2,500 revolutions per minute for about five minutes. With a 0.25 cc. tuberculin syringe, 0.03 cc. of the supernatant fluid is injected into the brain through the skull of a 4 to 6 weeks old mouse. A 27 gage needle one-fourth inch long is employed, and the injection is made slightly to one side of the midline of the skull and half way between the eye and the ear. The site of inoculation is moistened with alcohol before injecting. The mice are lightly etherized before the operation. It has been the practice at the laboratory to inoculate four mice with each brain specimen. In addition to shortening the period required for animal diagnosis, the method has the advantage of reducing the cost. Comparative results from brain material of 1,032 animals diagnosed by the usual methods in several laboratories and then injected into mice confirmed the positive results obtained by the usual methods but disclosed an error of 12 per cent for the brains reported negative for Negri bodies. The vaccination or treatment of animals with rabies vaccine apparently increases the difficulty of diagnosis by the discovery of Negri bodies.

Annals of Medical History, New York

10: 107-196 (March) 1938

Role of the Jewish Physician in the Progress of His People. H. A. Savitz, Boston.—p. 107.
Medical References in the Dramas of John Lyly. Alice Willcox, New York.—p. 117.
Tory Doctors of Georgia Under the Banishment Act of 1778. J. Krafka Jr., Augusta, Ga.—p. 127.
Browne Langrish's Letter on Usefulness of Oleaginous Warm Baths: Example of Eighteenth Century Medical Confusion. Frances Tomlinson Gardner and C. D. Leake, San Francisco.—p. 131.
Hunter Holmes McGuire, M.D., LL.D. S. McGuire, Richmond, Va.—p. 136.
"Scotch-Irish" of the Valley of Virginia and Their Influence on Medical Progress in America. H. H. Trout, Roanoke, Va.—p. 162.
Pioneer Medicine in Virginia. B. P. Seward, Roanoke, Va.—p. 169.

Annals of Surgery, Philadelphia

107: 321-480 (March) 1938

Acute Ileus: Analysis of 130 Cases Operated on at the Presbyterian Hospital, New York City, from 1932 to 1935, Inclusive. F. T. van Beuren Jr. and B. C. Smith, New York.—p. 321.
Acute Intestinal Obstruction: Statistical Survey of 342 Cases. T. Todyo, Kogoshima, Japan.—p. 340.
Perforated Gastric and Duodenal Ulcer. J. A. McCreery, New York. —p. 350.
*Mesenteric Lymphadenitis and Acute Abdomen: Report of Thirteen Cases. W. E. Adams and Mary B. Olney, Chicago.—p. 359.
Pathogenesis of Necrosis of Cerebral Gray Matter Following Nitrous Oxide Anesthesia. C. B. Courville, Los Angeles.—p. 371.
Generalized Lymphogranuloma Inguinale. T. P. Eberhard, New York. —p. 380.
Pilonidal Sinus. M. McKirdie, Iowa City.—p. 389.
Id.: Observations on 140 Cases Treated by Cautery Excision. H. Rogers and R. W. Dwight, Boston.—p. 400.
Treatment of Fractures of Shaft of Femur: Analysis of 120 Cases. R. H. Kennedy, New York.—p. 419.
*Water Balance in Neurosurgical Patients. J. C. White, W. H. Sweet and E. S. Hurwitt, Boston.—p. 438.
Surgical Knots. F. W. Taylor, Indianapolis.—p. 458.

Mesenteric Lymphadenitis.—Adams and Olney cite twelve cases of nontuberculous and one of tuberculous mesenteric lymphadenitis. The patients were less than 14 years of age. The average age reported by most authors is less than 20 years. Nontuberculous lymphadenitis must be differentiated from acute appendicitis, pyelonephritis, Meckel's diverticulitis and intussusception. The diagnosis is usually made at operation. The colicky nature of the pain and lack of localized symptoms in

cases which may be observed for a few hours may lead to a correct diagnosis without operation. This is especially true when there is a rapid subsidence of symptoms, a course which is often observed in this condition. Simple lymph node hyperplasia of the mesenteric nodes in the region of the ileocecal junction and, to a lesser extent, in the mesentery of the lower ileum, is the usual pathologic manifestation. Occasionally cultures of material from these nodes may yield pyogenic organisms. Exploratory celiotomy is the treatment of choice. The appendix is removed and the wound is closed without drainage. The prognosis for a permanent cure is good. Most patients remain symptom free following appendectomy.

Water Balance in Neurosurgical Patients.—In addition to hemorrhage, which averages from 500 to 1,500 cc., the patient undergoing a prolonged operation for an intracranial tumor may lose up to 1,000 cc. of water from his skin and lungs. White and his co-workers are concerned with what can be done to reduce this and how the disturbed fluid balance can be restored most effectively. The loss of water vaporized from the skin and lungs can be minimized by (1) the substitution for ether of local infiltration anesthesia and (2) avoidance of the use of too warm coverings in a hot operating room and in the ward. Replacement of fluid lost at operation is best carried out by the administration of a constant intravenous infusion of 5 per cent dextrose in physiologic solution of sodium chloride during all major craniotomies. The infusion should be continued in the ward until not more than 2,000 cc. of fluid has run in. In this way the interstitial fluid reserve, as well as the electrolyte balance, can be maintained at slightly reduced but safe levels. Postoperatively, fluid must be replaced much more accurately in neurosurgical than in general surgical patients. A slightly deficient state of hydration is safer in patients after operations on the brain, in order to minimize cerebral edema. In the absence of vomiting or diarrhea, a 5 per cent solution of dextrose in distilled water is the preferred solution for prolonged intravenous administration. In addition to the measured output of urine, feces and vomitus, from 1 to 2.5 liters (quarts) of fluid is lost by vaporization from the skin and lungs in the course of each day. If this insensible loss is not taken into consideration, serious dehydration may develop.

Archives of Neurology and Psychiatry, Chicago

39: 433-654 (March) 1938

Relation of Cerebral Cortex to Grasp Reflex and to Postural and Righting Reflexes. I. Bieber, New York, and J. F. Fulton, New Haven, Conn.—p. 433.

Effect of Experimental Temporary Vascular Occlusion on Spinal Cord: II. Changes in Mineral Salt Content of Nerve Cells. L. L. Tureen, St. Louis.—p. 455.

Histopathologic Changes in the Brain in Experimental Hyperinsulinism. A. Weil, E. Liebert and G. Heilbrunn, Chicago.—p. 467.

Organization of Memory Traces in Korsakoff Syndrome. Lauretta Bender, F. J. Curran and P. Schilder, New York.—p. 482.

*Variability of Circulation Time in Normal and in Schizophrenic Subjects. H. Freeman, Worcester, Mass.—p. 488.

Spongioblastoma Polare: Clinicopathologic Study of Twelve Cases. D. H. Echols, Ann Arbor, Mich.—p. 494.

Psychologic Structure of Catatonia: Psychopharmacologic Survey Utilizing Sodium Amytal. M. W. Thorner, Philadelphia.—p. 513.

References to Sex Organs and Functions in Speech Production of Two Preschool Children. A. A. Low, Chicago.—p. 519.

Gerstmann Syndrome: Finger Agnosia, Agraphia, Confusion of Right and Left and Acalculia: Comparison of This Syndrome with Disturbance of Body Scheme Resulting from Lesions of Right Side of the Brain. J. M. Nielsen, Los Angeles.—p. 536.

Neuromyelitis Optica: Pathologic Study in a Case. Vera B. Dolgopol, New York.—p. 561.

Hereditary Cerebellar Ataxia: Report of Case and Genetic Study. R. W. Waggoner, K. Löwenberg, Ann Arbor, Mich., and Kathryn G. Speicher, Orono, Maine.—p. 570.

Two Day Cycles of Alternating Good and Bad Behavior in Psychotic Patients. C. P. Richter, Baltimore.—p. 587.

Variability of Circulation Time.—Freeman determined the circulation time, with other physiologic processes, at intervals of four weeks on twenty-nine normal men and thirty-two men suffering from schizophrenia. During this interval the two groups of subjects lived in the same ward, ate about the same food and went through a similar amount of activity. The mean circulation time of the schizophrenic patients was longer than in normal subjects in both series of determinations. The variability in measurements of the circulation time was greater for the schizophrenic subjects than for the normal subjects, both for the individual and for the group. For this function the homogeneity of the individual is greater than that of the group. The variability of the function is such, however, that measurement of the circulation time for a given person can be considered to be a clinical characteristic for that subject only so far as it enables one to place him as having a low or a high value. The only variable which appeared to be correlated with the circulation time is the pulse rate. This correlation was greater for the group of schizophrenic patients than for the control group.

Archives of Pathology, Chicago

25: 303-444 (March) 1938

Cytologic Studies on Rheumatic Fever: III. Comparison of Cells of Subcutaneous Nodules from Patients with Rheumatic Fever, Rheumatoid Arthritis and Syphilis. C. McEwen, New York.—p. 303.

*Benzene Poisoning with Bizarre Extramedullary Hematopoiesis. E. A. Gall, Boston.—p. 315.

Changes in Liver in Amebic Dysentery, with Especial Reference to Origin of Amebic Abscess. R. B. Palmer, Chicago.—p. 327.

Fat in Infant Brain in Relation to Myelin, Blood Vessels and Glia. C. R. Tuthill, Staten Island, N. Y.—p. 336.

Development of Diurnal Cycle of Liver Function in Nursing Rats: Chemical and Histologic Study of Content of Glycogen and of Bile Acids in Liver Cell. H. P. G. Seckel and K. Kato, Chicago.—p. 347.

Benzene Poisoning.—Gall gives the history and histologic observations of a case of benzene poisoning. The clinical picture was that of aplastic anemia, leukopenia, thrombocytopenia and macrocytosis. The disease terminated fatally with gastrointestinal hemorrhage. There was inadequate hemopoietic regeneration exhibited by the bone marrow. Low grade reticulocytosis and the immature myeloid cells and nucleated red cells in the circulating blood were explained on the basis of the changes in the marrow. Massive metaplastic erythropoiesis was present in the spleen and to a less degree in the liver. It is believed that the metaplastic changes observed were produced as the result of atypical regeneration in a liver and spleen damaged by benzene.

Bulletin of Neurol. Inst. of New York, New York

6: 387-598 (Dec.) 1937

*Migraine in Children and Mechanism of Attack. H. A. Riley, New York.—p. 387.

Sense of Smell: XVI. Comparison of Results of Encephalography and Ventriculography and of Quantitative Olfactory Tests for Localization of Supratentorial Tumors of the Brain. C. A. Elsberg, New York.—p. 403.

Value of Quantitative Visual Tests for Localization of Supratentorial Tumors of the Brain: Preliminary Report. C. A. Elsberg and H. Spotnitz, New York.—p. 411.

Are Vision and Olfactory Sense Governed by Same Laws? Comparison of Results of Quantitative Functional Tests of Vision and of Sense of Smell and Its Significance. C. A. Elsberg and H. Spotnitz, New York.—p. 421.

*Comparison of Symptoms and Signs of Intracerebral and Extracerebral Tumors Involving Temporal Lobes. R. T. Collins, New York.—p. 430.

Ganglion Cell Tumors of Central Nervous System. A. Wolf and B. F. Morton, New York.—p. 453.

Encephalographic Appearance of Intraventricular Epidermoid. C. G. Dyke and L. M. Davidoff, New York.—p. 489.

Thresholds of Vibratory Sensibility as Determined by Pallesthesiometer: Study of Sixty Normal Subjects. R. W. Laidlaw and Mary Alice Hamilton, New York.—p. 494.

Acute Demyelinating Encephalomyelitis Following Respiratory Disease. C. Davison and S. Brock, New York.—p. 504.

Pathologic Study of Group of Cases Sometimes Referred to as Polyneuritis. W. M. Honeyman, New York.—p. 519.

Posterior Inferior Cerebellar Artery Thrombosis. J. D. Spillane.—p. 529.

Reactions of Patients to Encephalography: Analysis of 1,000 Consecutive Cases. S. S. Bohn, New York.—p. 540.

Appearance of Meningioma in Tissue Culture: Note. A. Wolf and W. M. Honeyman, New York.—p. 569.

Pyogenic Infections Within Vertebral Canal. M. M. Campbell, New York.—p. 574.

Migraine in Children and Mechanism of Attack.—Riley declares that migraine appearing in childhood shows a tendency to disappear at the time of puberty, and if these patients are followed over a period of years there is a definite inclination for the attacks to recur at the time of the climacterium. The headache may appear interchangeably with other manifestations of the allergic status, such as hay fever, eczema, urticaria or bronchial asthma. It may be that the essential condition is an unbalanced equilibrium of the cerebral circulation in which an abnormal condition of dilatation or constriction in contiguous cerebral areas exist. It is impossible to state the exact pathway over which the migrainous discomfort is transmitted to the central nervous system. According to prevailing

opinions, any part of the intracranial arterial or venous tree may be involved by the vasotonic process and thus give rise to the symptoms characterizing the migrainous attack. The ultimate solution of the problem of migraine will depend on the careful collection of clinical and experimental material. The real problems toward the solution of which investigation must be addressed are the questions as to what it is which results in this explosion, how the result is accomplished and why one person responds in a particular manner to a situation which in another is entirely innocuous.

Intracerebral and Extracerebral Tumors Involving Temporal Lobes.—Collins gathered 108 cases of tumors of the temporal lobe, verified by operation or necropsy, from the records of the Neurological Institute (seventy-four intracerebral and thirty-four extracerebral neoplasms). The duration of symptoms in patients with intracerebral neoplasms ranged from four days to ten years, while the duration in the extracerebral tumors varied from one month to eighteen years. The following symptoms showed the greatest variability: (1) Headache occurred in 17 per cent more intracerebral tumors, (2) aphasia occurred in twice the number of intracerebral tumors, (3) generalized convulsions were twice as frequent in intracerebral tumors, (4) unconscious spells were four times as frequent in extracerebral tumors, (5) jacksonian motor seizures were absent in intracerebral tumors and (6) subjective field defects were absent in extracerebral tumors. Of the more important symptoms occurring during the course of the two types of neoplasms, decreasing vision was much higher in the extracerebral tumors with the elevation occurring chiefly as a succeeding symptom, auditory symptoms were much higher in the extracerebral group, drowsiness and stupor did not occur in any instance of the extracerebral group, uncinate attacks were much higher in the intracerebral group and sensory symptoms were much higher in the extracerebral group, whereas vertigo was much higher in the intracerebral tumors. In viewing the statistics from a general standpoint and not from a comparative one between the two types of neoplasms, as far as the symptomatology is concerned neoplasms in the temporal lobes do not produce symptoms of dysfunction in a high percentage of cases. All the temporal symptoms, such as aphasia, uncinate attacks, dreamy episodes and probably auditory symptoms and subjective field defects, occurred in about 50 per cent of the cases. The most important localizing signs are contralateral hemianopic or quadranopic field defects. Neighborhood symptoms and signs play an important part in localizing and lateralizing temporal neoplasms, and the most important of these is an isolated contralateral central facial weakness. Contralateral motor and sensory disturbances aid in no little measure in accurate localization.

Connecticut State Medical Society Journal, Hartford

2: 109-162 (March) 1938

*Leukemia: Some Evidence That Leukemia May Be Allied to New Growth. T. S. Evans, New Haven.—p. 112.
Method for Collection and Analysis of Anesthetic and Surgical Statistics. M. Saklad, Providence, R. I.—p. 119.
Clinical Studies and Treatment of Primary Carcinoma of Lung. R. H. Overholt, Boston.—p. 122.
Removal of Large Ovarian Cyst, 135 Pounds. H. Thoms, New Haven. —p. 127.
Laboratory Aids in Diagnosis of Syphilis. F. L. Mickle, Hartford.—p. 130.
Tuberculous Infection Among Negro Children in New Haven. C. F. Batelli, New Haven.—p. 131.
Socialized Medicine in Soviet Union. Emily M. Pierson, Cromwell. —p. 133.
Treatment of Menopause. E. Novak, Baltimore.—p. 135.
Hemolytic Streptococcus Meningitis with Recovery: Case Report. C .C. Taylor and C. V. Calvin, Bridgeport.—p. 137.
Some Remarks on Operative Treatment of Glaucoma. D. H. Webster, New York.—p. 139.
How Sick Are We? C. Barker, New Haven.—p. 141.

Leukemia and Neoplasms.—Some pathologists believe that leukemia is a new growth of the bone marrow and the blood. In support of this view Evans gives the following clinical and laboratory observations: 1. The tumor is frequently in evidence for a long time before the development of the blood picture. This fact was evident in two of the four cases that are cited. 2. Mitotic figures (dividing blood cells) are seen in the lymph nodes, the bone marrow and rarely in the blood. One of the cases illustrates this in the lymph nodes. In a second case there were mitotic figures in the spleen, liver, kidneys, lungs, adrenals, gastro-intestinal tract, lymph nodes, bone marrow and the circulating blood. 3. Tissues are definitely invaded by these cells. Rapid growth is demonstrated in nearly all tissues of the body. The lymph nodes in one case gave evidence of marked invasion through the capsule of leukemic cells. 4. Sensitivity of these cells to x-rays is well known and roentgen treatment and the new "shatter" radium type of treatment is frequently effective in controlling the mass of cells in the liver, spleen and lymph nodes. 5. The tendency to skin and bone metastases is striking. The four cases of leukemia reported demonstrate one or more of the foregoing points.

Georgia Medical Association Journal, Atlanta

27: 39-80 (Feb.) 1938

Clinical and Experimental Studies of Burns. J. D. Martin Jr., Atlanta. —p. 39.
Tumors of the Brain: A Six Year Statistical Study. E. F. Fincher, Atlanta.—p. 47.
Bacterial Variations in Human Infections. R. S. Leadingham, Atlanta. —p. 50.
Ainhum (Dactylolysis Spontanea). C. R. Bennett, Eufaula, Ala.—p. 52.
Tropical Sprue: Report of Case. J. R. Rose, Unadilla.—p. 54.

Illinois Medical Journal, Chicago

73: 89-176 (Feb.) 1938

Correlation of Secretarial Duties in the State Medical Society. H. M. Camp, Monmouth.—p. 105.
Retrospect and Prospect. R. L. Green, Peoria.—p. 108.
Medicine in an Evolving Society. J. R. Neal, Springfield.—p. 109.
Definition of Socialized Medicine. R. H. Hayes, Chicago.—p. 112.
Mastitis, Mazoplasia, Mastalgia and Gynecomastia in Normal Adolescent Males. F. T. Jung and A. L. Shafton, Chicago.—p. 115.
Clinical Aspects of Nephritis. R. F. Herndon, Springfield.—p. 123.
Acute Sinus Infection in Children and Adults. S. M. Morwitz, Chicago. —p. 132.
Coccygeal Glomus, a Possible Factor in Coccygodynia. T. F. Reuther, Effingham.—p. 134.
*Pneumoperitoneum for Pulmonary Compression. J. B. Stokes, Pontiac. —p. 137.
Induced Hyperinsulinism. E. F. Dombrowski, H. H. Goldstein, A. P. Bay and J. V. Edlin, Chicago.—p. 147.
Effect on Urinary Bladder of Obstruction to Its Outlet. P. F. Olson, Dubuque, Iowa.—p. 151.
*Autohemotherapy in Pulmonary Tuberculosis. E. B. Freilich and G. C. Coe, Chicago.—p. 154.
Functional Heart Murmurs in Newborn Infants. W. J. Siemsen, Chicago.—p. 157.
Mongolism. M. Sherman and Elinore A. Tjaden, Chicago.—p. 159.
The Organization of the Medical Service of the Army in War. R. C. Heflebower, Chicago.—p. 162.
Medical Commission and Organized Medicine. N. L. Sheehe, Rockford. —p. 167.
The American Legion's Contribution to the Boy's State and Big Brother Movement. L. Applequist, Aurora.—p. 169.
Sex Crimes. J. Kercher, Chicago.—p. 171.

Pneumoperitoneum for Pulmonary Compression.—Stokes used pneumoperitoneum for pulmonary compression in fifty-five cases, most of which were unsuitable for collapse therapy. The prognoses were uniformly unfavorable. The indications for this type of compression may be subdivided as follows: It may be used as an independent procedure, preparatory to other forms of compression or collapse therapy, to supplement phrenic paralysis and to supplement unilateral pneumothorax, and it may be found of some benefit in the treatment of pulmonary tuberculosis complicated by tuberculous enterocolitis. Contraindications to pneumoperitoneum for pulmonary compression are poor general health, dyspnea, exudative or acute miliary disease, large cavities, rigid diaphragm and stiff walled cavities. The duration of pneumoperitoneum in forty-one cases ranged from one and a half to twenty-four months. In the fourteen cases in which pneumoperitoneum was instituted as an independent procedure the condition is apparently arrested in one, quiescent in one, improved in four and unimproved or worse in five; three patients are dead. Of twelve cases which, it was thought, might ultimately become suitable for phrenic interruption or for surgical thoracoplasty, a thoracoplasty was performed in one and on discharge the condition was classified as arrested, the condition is unimproved or worse in six and five patients are dead. In the five cases in which either a phrenicectomy or a phrenicotomy with unsatisfactory results was performed,

pneumoperitoneum was instituted with the hope that additional elevation of the diaphragm might prove beneficial; one patient has had a thoracoplasty and the condition is classed as apparently arrested, one is worse and three are dead. In the three cases in which pneumoperitoneum supplemented unilateral pneumothorax the results are also disappointing: the condition is unimproved in one and the other two patients are dead. The remaining seven patients received pneumoperitoneum both for pulmonary compression and for the relief of abdominal pain caused by tuberculous enterocolitis. The results in this group are likewise poor: one patient is improved, two are unimproved and four are dead. As a method of pulmonary compression, pneumoperitoneum has very limited application in the treatment of pulmonary tuberculosis. However, when other measures either fail or cannot be utilized, it may aid in the control of hemoptysis and in the reduction of toxemia.

Autohemotherapy in Pulmonary Tuberculosis.—Freiiich and Coe selected fifteen patients with pulmonary tuberculosis of the moderately or far advanced types for autohemotherapy. The eight women and seven men were studied for fourteen weeks and each received three treatments per week averaging fifty-two injections of from 10 to 15 cc. of whole fresh blood taken from the arm under sterile conditions and injected directly into the buttocks, with the blood remaining in the syringe for an average time of fifty seconds. None of the patients received pneumothorax treatments and all were either semiambulant or confined to bed and were subjected to the standard therapeutic regimen of the hospital. After two months of treatment, six showed a gain in weight varying from 1 to 7 pounds (0.4 to 3 Kg.) and averaging 4 pounds (2 Kg.). Eleven patients were losing weight before the experiment began. Of these, five stopped losing, two showed a gain and four continued to lose. All the patients were subjectively improved in that they evidenced improved appetites, better mental attitudes, lessened cough and lessened sweats. Objectively the results were less pronounced. The sputums of three patients became negative after two to two and a half months of treatment. The remaining twelve evidenced no change. The physical and x-ray signs were not altered. In only two cases did the temperature come down to a normal level. Two patients died within three months after the experiment was concluded. Five of the six patients continued to gain in weight and continued to evidence subjective improvement, but the remaining eight either continued to lose in weight or maintained a stationary level. Of these eight, four pursued a downward course during the next six months and three died. No toxic effects were evidenced in any of the cases during the experiment, although five of the men had an associated arteriosclerosis and one a mild diabetes. Considering a similar group of fifteen patients treated according to the same hospital regimen, except that they received pneumothorax without any autohemotherapy, the results were not comparable in that this group made much better improvement objectively and subjectively. There was only a slight difference in favor of the group treated with autohemotherapy as compared with a similar group treated by routine hygienic-rest management without pneumothorax. This form of therapy is worthy of further trial and may be a successful adjunct to the routine treatment of pulmonary tuberculosis with and without artificial pneumothorax.

Indiana State Medical Assn. Journal, Indianapolis

31: 111-160 (March) 1938

Pneumonia and Respiratory Disease from the Public Health Standpoint. H. G. Morgan, Indianapolis.—p. 111.

Pneumonia from Standpoint of the Laboratory Man. W. Dodds, Crawfordsville.—p. 113.

Treatment of Empyema. H. G. Weiss, Evansville.—p. 115.

Diagnostic Methods of Tuberculosis for the Practitioner. D. M. Short, Evansville.—p. 119.

Socialized versus Humanized Medicine. G. B. Wilder, Anderson.—p. 121.

Acute Perforated Peptic Ulcers and Their Relation to Trauma. C. A. Weller, Indianapolis.—p. 123.

Ether Anesthesia. R. Geider, Indianapolis.—p. 128.

Production of Abnormally High Erythrocyte Counts in Persons with Achlorhydria by Continued Use of Liver Extract. H. M. Fowler, Fort Wayne.—p. 130.

Journal of Bacteriology, Baltimore

35: 81-206 (Feb.) 1938. Partial Index

Enterococci and Related Streptococci. J. M. Sherman, Ithaca, N. Y.—p. 81.

Further Studies on IV Variants of Salmonella Typhi-Murium (Aertrycke), with Especial Reference to Cultures from Pigeons. P. R. Edwards, Lexington, Ky.—p. 123.

Influence of Vitamin C on Growth of Anaerobes in Presence of Air, with Especial Reference to Relative Significance of EH and O_2 in Growth of Anaerobes. I. J. Kligler and K. Guggenheim, Jerusalem, Palestine.—p. 141.

Fermentation of Acetylmethylcarbinol by Escherichia-Aerobacter Group and Its Significance in Voges-Proskauer Reaction. R. P. Tittsler, Rochester, N. Y.—p. 157.

Preservation of Bacterial Cultures: I. H. E. Morton and E. J. Pulaski, Philadelphia.—p. 163.

Hydrogen Sulfide Studies: I. Detection of Hydrogen Sulfide in Cultures. C. A. Hunter and H. G. Crecelius, Vermilion, S. D.—p. 185.

Journal of Immunology, Baltimore

34: 91-184 (Feb.) 1938

Studies in Experimental Hypersensitiveness in Rhesus Monkey: IV. Allergic Reaction in Passively Locally Sensitized Abdominal Organs (Preliminary Report). M. Walzer, I. Gray, H. W. Straus and S. Livingston, Brooklyn.—p. 91.

Agglutinative Titration of Antimeningococcus Serums, Types I and III with Encapsulated Bacteria. P. A. Little, Pearl River, N. Y.—p. 97.

*Diluent for Stabilizing Tuberculin; Old Tuberculin Diluted for Mantoux Test. R. Gottschall and W. E. Bunney, Lansing, Mich.—p. 103.

Antigenic Structure of Hemolytic Streptococci of Lancefield Group A: I. Preparation of Labile, Type-Specific Antigen; Its Identification as Griffith Type-Specific Agglutinogen and as a Substance from Which a Group Specific and Type-Specific Hapten Are Derivable. S. Mudd, E. J. Czarnetzky, D. Lackman and H. Pettit, Philadelphia.—p. 117.

Id.: II. Lability of Labile Antigen and Its Explanation; Isolation of Labile Antigen in Pure State; Its Relation to Oxygen-Labile Antigenic Streptolysin. E. J. Czarnetzky, S. Mudd, H. Pettit and D. Lackman, Philadelphia.—p. 155.

Diluent for Stabilizing Tuberculin for Mantoux Test.—Gottschall and Bunney found that a diluent buffered to p_H 7.2 with borax and boric acid, containing 0.04 per cent acacia and 0.5 per cent phenol, stabilized the tuberculins tested when diluted 1 : 10,000 and dispensed in rubber stoppered hard glass vials of 1 or 10 cc. capacity. This stability was proof against destruction by shaking for seven days, exposure to indirect sunlight at room temperature for four months or prolonged transportation to warm climates and return.

Journal of Nutrition, Philadelphia

15: 103-210 (Feb.) 1938

Method of Increasing Precision in Vitamin A Assay. Pearl P. Swanson, Gladys T. Stevenson and P. Mabel Nelson, Ames, Iowa.—p. 103.

*Influence of Diet on Nitrogen Balances of Preschool Children. Jean E. Hawks, Merle M. Bray and Marie Dye, East Lansing, Mich.—p. 125.

Heat Production and Gaseous Metabolism of Young Male Chickens. H. G. Barott, J. C. Fritz, Emma M. Pringle and H. W. Titus, Beltsville, Md.—p. 145.

Trace Element Content of the Newborn Rat (Spectrographically). L. L. Rusoff and L. W. Gaddum, Gainesville, Fla.—p. 169.

Changes in Total Calcium Content of Bones During Development of Rickets. B. Hamilton and W. J. Highman Jr., Chicago.—p. 177.

Easily Constructed Rat Metabolism Apparatus Which Automatically Records Oxygen Consumption and Animal Activity. E. L. Schwabe and F. R. Griffith Jr., Buffalo.—p. 187.

Effect of Prolonged Exposure to Low Temperature on Basal Metabolism of the Rat. E. L. Schwabe, F. E. Emery and F. R. Griffith Jr., Buffalo.—p. 199.

Influence of Diet on Nitrogen Balance.—Hawks and her associates observed five children who received constant diets containing 3 Gm. of protein per kilogram of weight. They all excreted the same proportion of the nitrogen intake, but the urine figures fluctuated according to variations in the intake, while the feces values remained constant for each child and were proportional to the dry weight of the feces. The ratio of fecal nitrogen to dry matter consumed remained fairly constant for each child but varied between children according to the character of the stools. For individual children the coefficient of digestibility varied between 86 and 92.7 per cent, while the retention values remained more constant, but both values fluctuated in proportion to the period by period variation in the diet. Immediately following the change to a protein diet of 4 Gm. the excretion values were irregular, but after nine days they had apparently reached an equilibrium. The average of the retention and intake values per kilogram for all children for each separate period showed that the children retained nitrogen in relation to the period by period variations except immediately after the change in diet.

Journal of Pediatrics, St. Louis

12: 139-286 (Feb.) 1938

*Inclusion Blennorrhea. W. A. Howard, Washington, D. C.—p. 139.
Erythema Exsudativum Multiforme with Ophthalmia and Stomatitis: Report of Two Cases in Children with Certain Observations on Histopathology and Animal Inoculation. Katherine J. Edgar and J. T. Syverton, Rochester, N. Y.—p. 151.
Study of Prophylactic Effects of Pertussis Vaccine. J. G. Kramer, Akron, Ohio.—p. 160.
Hodgkin's Disease with Terminal Eosinophilia Occurring in a Negro Child with Sicklemia. K. Kato and W. W. Cardozo, Chicago.—p. 165.
Severe Functional Anemia in a Child, Resembling Pernicious Anemia of Adults: Case Study. J. M. Adams and I. McQuarrie, Minneapolis. —p. 176.
*Free Diet in Children with Diabetes. A. Lichtenstein, Stockholm, Sweden.—p. 183.
Influence of Daily Serving of Spinach or Its Equivalent in Oxalic Acid on Mineral Utilization of Children. P. Bonner, F. C. Hummel, M. F. Bates, J. Horton, H. A. Hunscher and I. G. Macy, Detroit.—p. 188.
Toxic Encephalopathy in a Child Following Internal Administration of Potassium Chlorate and Sulfarsphenamine. J. Greengard, Chicago. —p. 197.
Cholecystitis in Childhood. H. Lowenburg Jr. and A. G. Mitchell, Cincinnati.—p. 203.
Developmental History of Stuttering Children. Mildred Freburg Berry, Rockford, Ill.—p. 209.
Emotional and Social Development of Girls with Heart Disease. H. B. Silver, Newark, N. J.—p. 218.
Nature of the American Diet. J. D. Boyd, Iowa City.—p. 243.

Inclusion Blennorrhea.—Howard states that recent research indicates that inclusion blennorrhea is a specific, nonbacterial form of conjunctivitis due to a filtrable virus, apparently transmitted to the infant from the mother during passage through the birth canal. It appears from the fifth to the tenth day of life, and its course, while self limited, may extend over many months. Diagnosis can be established only by means of examination of Giemsa-stained preparations of the conjunctival secretions. Cultures are either sterile or show only the usual nonpathogenic conjunctival organisms. In the absence of a specific therapeutic agent, treatment should be symptomatic, with the prevention of secondary infection. Bacteriologic studies should be made in every case of ophthalmia neonatorum, however mild, and each examination should include a study of the exudate and conjunctival scrapings after special staining by the Giemsa method.

Diet in Children with Diabetes.—Lichtenstein has been using the free diet for diabetic children for more than four years. By free diet he means a diet without any restrictions and without weighing the food or any of its ingredients. The only restriction in diet is to avoid luxury, which should be avoided also by healthy children. The insulin is given in doses sufficient to keep the child in good general condition, in good increase of weight and free from ketone bodies in the urine. The change from the restricted to the free diet generally takes place without any disturbances. As a result of the release from restrictions the children show signs of voracious hunger for carbohydrates. After some time, however, they reduce the consumption of carbohydrates of their own accord. An inconvenience attached to the free diet seems to be that three injections of the usual insulin must be given in twenty-four hours, often in cases in which two injections were sufficient during the restricted diet. With protamine insulin it has been possible to reduce the insulin doses from three to two, and in many cases to only one injection a day in spite of keeping the child on a free diet. Children who had earlier always shown decided positive reactions to the Gerhardt and Legal tests and who in many instances had to be admitted to the hospital again and again with threatening coma have been free from these difficulties after being placed on a free diet.

Physiological Reviews, Baltimore

18: 1-136 (Jan.) 1938

Relation of Anterior Pituitary to Carbohydrate Metabolism. Jane A. Russell, Berkeley, Calif.—p. 1.
Physiology of Excretion Among Arthropoda. N. S. R. Maloeuf, New Haven, Conn.—p. 28.
Recent Advances in Knowledge Concerning Hearing and Speech. Phyllis M. Tookey Kerridge, London, England.—p. 59.
Arterial and Venous Pressure Factors in Circulatory Failure. T. R. Harrison, Nashville, Tenn.—p. 86.
Nutritive Significance of Amino Acids. W. C. Rose, Urbana, Ill.—p. 109.

Radiology, Syracuse, N. Y.

30: 147-276 (Feb.) 1938

Clinical and Roentgenologic Manifestations and Surgical Treatment of Diaphragmatic Hernia: Review of 131 Cases. S. W. Harrington and B. R. Kirklin, Rochester, Minn.—p. 147.
Pelvic Roentgenography in Pregnancy: Further Experiments with 90 Degrees Triangulation Methods. P. C. Hodges and Jane E. Hamilton, Chicago.—p. 157.
Use of Interstitial Radiation in Treatment of Primary and Recurrent Carcinoma of Uterine Cervix. A. N. Arneson, St. Louis.—p. 167.
Analysis by X-Rays of Ultimate Structures of Living Materials. G. L. Clark, Urbana, Ill.—p. 180.
Evolution of Radiotherapy, During Past Ten Years, in Treatment of Certain Generalized Affections. R. Gilbert, Geneva, Switzerland; translation by A. U. Desjardins, Rochester, Minn.—p. 191.
Colon Spasm. H. W. Soper, St. Louis.—p. 196.
Clinical Results in Sixty-Nine Patients Treated by Substerilizing Dose of Radium or X-Ray. J. A. Corscaden, H. Kasabach and M. Lenz, New York.—p. 203.
Hereditary Effects of X-Ray Radiation. M. Demerec, Cold Spring Harbor, N. Y.—p. 212.
Surface and Depth Intensities for Short Distance Low Voltage Therapy. M. C. Reinhard and H. I. Goodale, Buffalo.—p. 221.
Advancing Osteosclerosis of Unknown Etiology: Roentgenologic Manifestation of Probable Infectious Process of Bone. E. Freedman, Cleveland.—p. 225.
Neuroblastoma: A Childhood Type of Malignant Tumor of Sympathetic Nervous System. I. S. Startz, Elmhurst, N. Y., and J. Abrams, Brooklyn.—p. 232.

Southwestern Medicine, Phoenix, Ariz.

22: 41-80 (Feb.) 1938

*Bronchopulmonary Moniliasis. O. J. Farness, Tucson, Ariz.—p. 41.
Headaches Caused by Eyestrain. M. C. Wilensky, New Orleans.—p. 43.
Postvaccinal Encephalitis. E. W. Lander, Roswell, N. M.—p. 46.
Use of Paraldehyde in Home Deliveries. O. P. Heninger, Safford, Ariz.—p. 48.
Outbreak of Botulism in Tucumcari, New Mexico. C. H. Douthirt, Santa Fe, N. M.—p. 51.
Laboratory Aids in Treating Pneumonia. C. N. Boynton, Phoenix, Ariz. —p. 54.

Bronchopulmonary Moniliasis.—Farness believes that bronchopulmonary moniliasis, masking under the guise of tuberculosis, occurs in all climates with much greater frequency than is generally recognized. The disease is amenable to treatment, making early diagnosis important. In the mild type the general condition of the patient is good and there is no fever. Frequent recurrence of slight, persistent cough with scanty, mucopurulent sputum without blood is the rule. Physical examination of the chest is negative or reveals only a few rales. In the moderate form the symptoms may simulate an early phthisis with continued low grade fever. The sputum is mucopurulent and tenacious and may contain blood. Symptoms may be continuous but are usually intermittent. Nutrition is affected to only a slight degree. A diagnosis of chronic bronchitis, bronchiectasis or bronchial asthma is usually made. In the severe form the disease runs a prolonged course with periods of exacerbation of symptoms. A history of recurrent attacks of "pneumonia" is often elicited. The pulmonary involvement may be unilateral or bilateral. Roentgenologically the picture is that of pulmonary tuberculosis. There is the same hectic fever and night sweats with gradually developing emaciation and loss of strength. There are attacks of dyspnea and paroxysmal coughing, worse at night. The sputum is mucopurulent, tenacious and often hemorrhagic and may have a yeasty or sweetish odor. Many cases follow pneumonia or influenza and some give a history of bronchial asthma several years prior to the onset of the disease. This suggests a lowered tissue resistance. The physical signs are those of patchy consolidation and fibrosis, of purulent bronchitis and bronchiectasis and often of abscesses and cavities. Roentgenograms are not distinctive and simply reveal a pathologic process similar in appearance to other types of pulmonary infection. Sputum from a case of pulmonary infection, which fails to reveal acid-fast organisms and does contain yeastlike organisms, should be subjected to further mycologic studies. The responsible organism is of the genus Monilia, belonging to the class of Hyphomycetes or fungi imperfecti. There are two methods for the differentiation of species: animal inoculation and sugar fermentation reactions. The prognosis is on the whole good. The mild type may result in spontaneous cure and is always readily amenable to specific therapy. The moderate type usually responds but often requires a prolonged course of treatment. The severe type may respond to treatment in its very early stages but is apparently incurable,

although it may be months before death supervenes. The iodides are regarded as specific. This is based on the specific germicidal effect of potassium iodide on Monilia. It is administered in large doses by the oral or intravenous route. A case is reported.

Surgery, Gynecology and Obstetrics, Chicago

66: 257-562 (Feb. 15) 1938. Partial Index

Technical Surgical Procedures for Gastric and Duodenal Ulcer. R. R. Graham, Toronto.—p. 269.
Lesions of Intervertebral Disk and Ligamenta Flava: Clinical and Anatomic Studies. H. C. Naffziger, V. Inman and J. B. de C. M. Saunders, San Francisco.—p. 288.
Immediate or Delayed Treatment of Acute Cholecystitis: Liver Shock and Death. H. W. Cave, New York.—p. 308.
Diverticula of the Intestine. C. F. Dixon, J. L. Deuterman and H. M. Weber, Rochester, Minn.—p. 314.
*Tuberculosis of the Kidney. F. Hinman, San Francisco.—p. 329.
Some Physiologic and Pathologic Observations on Urinary Tract During Pregnancy. J. M. Hundley Jr., I. A. Siegel, F. W. Hachtel and J. C. Dumler, Baltimore.—p. 360.
Modern Surgery of Retinal Detachment. H. S. Gradle and S. J. Meyer, Chicago.—p. 380.
Hoarseness. F. E. LeJeune, New Orleans.—p. 405.
*Water Balance in Relation to Toxemias of Pregnancy. M. E. Davis, Chicago.—p. 426.
Abdominal and Pelvic Pain—from a Gynecologic Point of View. A. H. Curtis, Chicago.—p. 432.
Recognition and Prevention of Lead Poisoning. R. A. Kehoe, Cincinnati.—p. 444.
Complete Avulsion of Scalp and Loss of Right Ear: Reconstruction by Pedunculated Tube Grafts and Costal Cartilage. J. A. Cahill Jr. and P. A. Caulfield, Washington, D. C.—p. 459.
Functional Disabilities After Simple Fracture, with Especial Reference to Importance of Bone Atrophy in Prolongation of Disability. F. B. Gurd, Montreal.—p. 489.
Fractures of Both Bones of Forearm Excluding Those at Elbow Joint and Wrist Joint. W. B. Carrell, Dallas, Texas.—p. 506.
Correlation of Body Segmental Temperature and Its Relation to Location of Carcinomatous Metastasis: Clinical Observations and Response to Methods of Refrigeration. T. Fay and G. C. Henny, Philadelphia.—p. 512.
Treatment of Cancer of Rectum. J. P. Lockhart-Mummery, London, England.—p. 527.
Surgical Treatment of Carcinoma of Thoracic Esophagus: Report of Three Successful Cases. J. H. Garlock, New York.—p. 534.
Cystectomy and Transplantation of Ureters into Bowel for Carcinoma of Bladder. C. C. Higgins, Cleveland.—p. 549.

Tuberculosis of the Kidney.—Hinman contends that the conception that renal tuberculosis is bilateral at onset, that in the majority one side heals spontaneously leaving a unilateral lesion and that occasionally both sides may so heal should have no effect on the management of clinical renal tuberculosis. This conception necessitates more than ever the differentiation of preclinical and other forms of tuberculosis of the kidney—such as miliary tuberculosis—from the clinical forms of the disease. The finding of pus and tubercle bacilli in the urine points definitely to the clinical form of renal tuberculosis, but the diagnosis is not complete until all possible associated lesions have been searched for and recognized. The routine use of retrograde pyelography is condemned, as it may aid in the spread of the infection. Worldwide experience demonstrates the superiority of nephrectomy in the treatment of unilateral tuberculosis of the kidney. When tuberculosis is localized in the kidney and the patient has been properly prepared, nephrectomy is almost 100 per cent curative. When associated lesions exist in the bladder, seminal tract or elsewhere, nephrectomy is still from 60 to 70 per cent curative. Nephrectomy is rarely an emergency procedure and should be performed only after a complete study and careful preparation. Clamping of the pedicle should be the first objective. As much of the ureter as is accessible should be removed but a complete ureterectomy is unnecessary.

Water Balance in Relation to Toxemias of Pregnancy.—Davis states that normally the body maintains a balance of water by regulating the output to the intake. The intake of water may exceed the output, in which case a positive water balance will be established. This may be due to an excessive consumption of fluid or to an interference with the output. Pregnancy normally is characterized by a positive water balance. This retention of water is most marked in the last half of the gestation. The generalized tendency to edema in pregnant women may be the cause or the effect of this positive water balance. The fetus may be regarded as a fast growing tissue of the mother's body consuming considerable water. The placenta likewise enlarges rapidly, leading to marked retention of fluid. The total water requirement of the mother may become disproportionate to the surface area. This permanent increased fluid supply, cellular and intracellular in character, is evidenced by the ease with which edema develops late in pregnancy. The blood volume gradually increases so that at term the total volume averages 23 per cent greater than in the nonpregnant individual. This blood volume increase is a blood dilution, for the increase in the hemoglobin and the cellular constituents does not keep pace with the increase in the blood plasma. This altered fluid metabolism of normal pregnancy necessary for both the growing fetus and the preparation for labor can be easily upset and result in pathologic complications of serious import. An increased positive water balance is thus a characteristic finding in most of the late toxemias of pregnancy. A decreased blood volume with a concentration of the cellular constituents is associated with severe preeclampsia and eclampsia. Negative water balance results when the available supply of water to the body diminishes below normal levels, either as a result of decreased intake or because of an interference with gastrointestinal absorption. Thus, starvation, vomiting and diarrhea result in an interference with the fluid intake. There may be an excessive loss of water so that the normal balance cannot be maintained. In severe cases of dehydration there is a decrease in the blood volume, with a resultant increase in hemoglobin, cell volume, serum protein and nonprotein nitrogen. Hyperemesis gravidarum is chiefly characterized by a negative water balance in which condition the available supply of water to the body tissues is decreased because of the continued vomiting. The late toxemias of pregnancy, preeclampsia and eclampsia, are characterized by a marked disturbance of water balance. The normal positive water balance of pregnancy probably contributes to the ease with which a pathologic water balance develops. Clinically, the earliest manifestation of preeclampsia may be the sudden gain in weight. Whenever a patient gains from 3 to 4 kilograms (6½ to 9 pounds) in a week or ten days, one must assume that this increased weight represents to a large extent an increased water storage. Edema may or may not be present, depending on whether this fluid is largely intercellular or extracellular. With the retention of water there occurs a retention and storage of chlorides, for tissues cannot store water unless sufficient chlorides are present. The blood chlorides, however, fail to increase in amount even during the convulsive state, for a balance is always maintained between the blood chlorides and the tissue chlorides. This increased chloride content of the body tissues represents, therefore, an increased intake and retention of chlorides rather than a decrease in the chloride output. If one now carefully estimates the intake and the output of fluids, the increasing positive water balance is readily detected.

Texas State Journal of Medicine, Fort Worth

33: 671-726 (Feb.) 1938

Mixed Tumors. R. D'Aunoy, New Orleans.—p. 675.
Massive Atelectasis Complicating Pulmonary Tuberculosis. H. R. Hoskins, Sanatorium.—p. 678.
Clinical Aspects of Closed Intrapleural Pneumolysis. L. J. Moorman, Oklahoma City.—p. 681.
Toxic Manifestations of Sulfanilamide. S. E. Stout, Fort Worth.—p. 685.
Hydrogen Ion in Complement Fixation. H. B. Williford, Beaumont.—p. 687.
And Sudden Death: Sudden Death in Surgical Cases. I. Cohn, New Orleans.—p. 689.
Early Diagnosis of Perinephric Abscess. J. M. Pace, Dallas.—p. 693.
Solitary Cyst of the Kidney. S. Cooper, Abilene.—p. 697.
Cervical Carcinoma. R. L. Lewis, Paris.—p. 699.
Infections of Cervix Uteri. R. W. Crosthwait, Waco.—p. 702.

West Virginia Medical Journal, Charleston

34: 97-144 (March) 1938

Syphilis in Industry. J. E. Moore, Baltimore.—p. 97.
Studies in Transmission of Syphilis. D. C. Smith, Charlottesville, Va., and W. M. Sheppe, Wheeling.—p. 101.
Facilities of State Hygienic Laboratory for Detection of Syphilis. K. E. Cox, Charleston.—p. 105.
Syphilis of Bones and Joints. C. B. Smith, Charleston.—p. 111.
Early Diagnosis of Syphilis in the Female. R. M. Bobbitt, I. R. Harwood and J. F. Barker, Huntington.—p. 114.
Diagnosis and Treatment of Paresis. A. L. Osterman, Wheeling.—p. 116.
Diagnosis and Treatment of Cardiovascular Syphilis. R. J. Condry, Elkins.—p. 126.
William Shakespeare, Syphilographer. W. E. Vest, Huntington.—p. 130.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Physical Medicine, London

1: 43-80 (Feb.) 1938

Physiotherapy and Peripheral Circulation. F. Nagelschmidt.—p. 44.
Low Intensity Short Wave Therapy: Some Clinical Results. P. P. Dalton.—p. 48.
Electrical Investigation of Neuromuscular Function. A. P. Cawadias.—p. 51.
Infra-Red Therapy in Acute Suppurative Conditions. E. Taylor-Pengelley.—p. 63.

British Medical Journal, London

1: 265-320 (Feb. 5) 1938

New Outlook on Physiology and Pathology of Mental and Emotional States. F. A. Pickworth.—p. 265.
*Healing of Empyema Cavities, with Especial Reference to Aspiration and Air Replacement as an Aid to Operation. P. R. Allison.—p. 272.
Tuberculosis in Infants. Dorothy Price.—p. 275.
Unusual Tuberculous Appendix. D. J. Harries and E. Williams.—p. 277.
Pelvimetry and the True Conjugate. J. Howkins.—p. 278.
Why "Postanesthetic" Pulmonary Complications? G. R. Osborn.—p. 279.
Chloroma: Case History and Postmortem Findings. R. E. Horsfall.—p. 280.

Healing of Empyema Cavities.—Allison maintains that the classification of acute empyemas into the synpneumonic and the postpneumonic, and the recognition of the significance of these types have done much to reduce the immediate mortality from operation. Now the incidence of chronic empyema with its associated morbidity and mortality should be reduced. To this end two groups, simple and complicated, are suggested. The simple empyema is one in which no permanent structural alteration has taken place within the lung tissue and in which, with adequate drainage, the lung expands completely to fill the chest with no deformity of the parietes. Such an empyema should always heal without difficulty. The complicated empyema is one in which structural damage has occurred in the lung to such an extent that complete reexpansion is impossible, and in those circumstances not only will there be delay in healing but this will occur partly at the expense of the parietes. The most significant point in the history is the relation of the febrile attack to the pleuritic pain. If the pleuritic pain occurs at the beginning of the illness the empyema is likely to be a simple one. If, however, a febrile attack is the initial disturbance, followed by pleuritic pain, the empyema is likely to be complicated. Streptococcic pneumonia and pneumonitis, secondary to lung abscess and bronchial block, start in the depths of the lung tissue and spread outward to the pleura by the interstitial lymphatics, so that pleurisy occurs at a later stage of the illness. In no case does preliminary aspiration do harm: it relieves the patient and at the same time gives valuable information to the operator. When a cavity is filled with large masses of fibrinous clot, aspiration is not always possible, but its routine attempt has been found to diminish the number of cases requiring secondary drainage operations. When empyemas have been drained without previous aspiration, it has sometimes been found that these adjustments result in the lung coming up flat against the end of the tube and so interfering with the drainage of a relatively deep space. Therefore before the point of drainage is decided it is an advantage to allow these immediate adjustments to be made by the aspiration of as much of the pus as possible, followed by x-ray examination in two or more planes. It is desirable to know before operation the shape, position and size of a cavity after the pressure within it is relieved, the composition of the parietal wall and such information about the way in which the empyema will heal as may be deduced from consideration of its nature and the elasticity of its walls. To this end aspiration is done through a wide-bore cannula and, when possible, as much of the pus is removed as possible, and then, by leaving the cannula in position while detaching it from the suction apparatus, a little air is allowed to be drawn into the cavity by the patient's own respiratory effort. The presence of air in an empyemic cavity is not harmful, but by creating a fluid level it makes accurate x-ray examination of the cavity possible. Following aspiration, roentgenograms of the chest are taken, from which the best point for drainage is chosen. The method of drainage, open or closed, is not considered to be of any importance so long as the tube is large enough and in the right place. A portion of a rib is always resected.

Glasgow Medical Journal

11: 53-112 (Feb.) 1938

*Observations on Diagnostic and Prognostic Significance of Electrocardiograms Showing Anomalous Forms of QRS in Lead III, Based on an Analysis and Follow-Up Series of Cases. A. A. F. Peel.—p. 53.

Electrocardiograms Showing Anomalous Forms of QRS in Lead 3.—Peel reviewed 1,873 electrocardiograms obtained from 1,307 paitents during 1928 to 1933. Those showing anomalous forms of QRS_3 have been selected and classified into groups, and the patients in each group have been followed up and when possible reexamined during 1937. Many different types of QRS_3 have been encountered. The series of patients includes both hospital and private, ambulant and bedridden. All the more important varieties of cardiovascular disease were represented and in addition there were numerous "functional" cases, a number of patients suffering from disease other than cardiovascular, and a few who were thought to be malingering. The most important prognostic feature of these electrocardiograms is the breadth of the QRS complex. When the duration of the QRS complex at the first examination was below 0.08 second the mortality in the interval was 23 per cent. With a QRS duration of 0.08 second the mortality was 43 per cent. When the QRS duration exceeded 0.08 second at the first examination the mortality was 71 per cent.

Indian Journal of Medical Research, Calcutta

25: 569-834 (Jan.) 1938. Partial Index

Epidemic of Cholera in a Rural Area in South India Caused by "Ogawa" Type of Vibrio Cholerae. K. V. Venkatraman and C. G. Pandit.—p. 585.
Laboratory Tests on Fungistatic and Fungicidal Effect of Various Substances. P. A. Maplestone and N. C. Dey.—p. 603.
Vitamin A Contents of Ghee. K. S. Grewal and B. D. Kochhar.—p. 623.
*Treatment of Stomatitis Caused by Diet Deficiency. W. R. Aykroyd and B. G. Krishnan.—p. 643.
Skimmed Milk and Growth of School Children, with Statistical Note. B. G. Krishnan and K. Mitra.—p. 647.
Studies on Vitamin A Deficiency: Part III. Lesions of Peripheral Nervous System. M. V. Radhakrishna Rao.—p. 661.
Available Iron in Some Common Indian Foodstuffs, Determined by α, α'Dipyridine Method. S. Ranganathan.—p. 677.
Effect on Rats of Supplementing a South Indian Diet with Calcium and Phosphorus. R. K. Pal and Narindra Singh.—p. 693.
Hematologic Investigations in South India: Part II. Effect of Administration of Iron on Hemoglobin Level in Indian Girls and Young Women. G. Sankaran and K. Rajagopal.—p. 753.
Absence of Effective Immunity After Cure of Protozoal Infections. H. E. Shortt, S. R. Pandit, K. P. Menon and C. S. Swaminath.—p. 763.
*Successful Transmission of Cutaneous Leishmaniasis by Inoculation to Man from Natural Lesion Occurring on Dog in India. J. A. Sinton.—p. 787.
Studies in Effects of Heat: Part I. Biochemical and Physical Changes in Ten Cases Suffering from Effects of Heat. D. N. Chakravarti and N. Tyagi.—p. 791.

Treatment of Stomatitis Caused by Diet Deficiency.—Aykroyd and Krishnan present the results of giving eggs, soya bean and yeast autoclaved in an alkaline medium to children suffering from stomatitis. The patients given treatment were all boys of ages ranging from 8 to 16 years. Nearly all were living in boarding schools, and during the period the supplement was given they continued to consume the defective diets which had led to the development of stomatitis. Of seven boys treated with eggs, one egg daily for thirty-two days produced definite improvement in three but not complete disappearance of all signs. Two eggs were then given daily for twenty days, and complete cure resulted. The four boys who were given three eggs daily were cured in three weeks. Other pupils in the institutions on the same diet without the addition of eggs showed no improvement during the same period. Five patients received 1½ ounces (45 Gm.) daily of soya bean for thirty-two days and 3 ounces (90 Gm.) daily for thirty-two days. The beans were given whole, being cooked until soft. No improvement was observed in any of the boys, and one of them became worse. In the same period three boys in the same school were cured by eggs. Alkaline yeast autoclaved for five hours at 130 C. at p_H 9.2 and subsequently neutralized was given to eight boys, the dose being one-half ounce (15 Gm.) daily.

Of four patients three were completely cured after receiving 26 ounces (780 Gm.), while the remaining patient showed definite improvement. In four day-school boys whose diet was largely milled rice the improvement, when the yeast (one-half ounce daily) was given, was immediate and unquestionable. Within a few days soreness of the mouth had disappeared and the boys expressed their delight at the improvement. After from 10 to 14 ounces (300 to 420 Gm.) of yeast had been taken, signs of stomatitis had completely disappeared in three boys and were only slightly visible in the fourth.

Transmission of Leishmaniasis to Man from Canine Lesion.—Sinton produced cutaneous leishmaniasis in a European volunteer by the inoculation of infected material obtained from a natural case of the disease, occurring in a dog in India. The incubation period of the lesion was more than twelve months, and the nodule persisted for twenty months. Healing was spontaneous without any therapeutic intervention. The infection was transmitted by cutaneous scarification from the first to a second European volunteer, in whom the incubation period was only five months.

Journal of Neurology and Psychiatry, London

1: 1-60 (Jan.) 1938

Laurence-Moon-Biedl Syndrome: Pathologic Report. G. M. Griffiths.—p. 1.
Example of Status Marmoratus of Cerebral Cortex. R. M. Norman.—p. 7.
Ependymal Streaks and Accessory Cavities in Human Occipital Lobe. A. F. Liber.—p. 17.

Lancet, London

1: 299-358 (Feb. 5) 1938

Variations in Secretory Activity of Human Sweat Glands. Y. Kuno.—p. 299.
Streptococcic Meningitis: Sulfanilamide in Its Management. T. Cawthorne.—p. 304.
*Vitamin C in Heart Failure. W. Evans.—p. 308.
A Boy with No Fibrinogen. R. G. Macfarlane.—p. 309.
*Erythrocyte Sedimentation and Plasma Fibrinogen. W. Oakley.—p. 312.
Air Embolism in Urethroscopy and Tubal Insufflation. J. H. Dible, T. F. Hewer, A. O. F. Ross and C. H. Walsh.—p. 313.
"Gas-Oxygen" and Cerebral Congestion. H. J. Brennan.—p. 315.

Vitamin C in Heart Failure.—Evans found that vitamin C increased the urinary output in each of eight cases of cardiac failure and in another with considerable edema of the lower extremities of unknown etiology. In two cases the increase was slight, in four it was either moderate or considerable and in three cases it was great. When a quantitative estimate was made of the excess of urinary output over fluid intake in the nine cases over a period of 173 days, it was found that vitamin C induced greater diuresis than digitalis but less than theobromine, theobromine with sodium salicylate, and ammonium chloride. In each of three patients in whom cardiac failure had occurred with auricular fibrillation, vitamin C induced diuresis actually in excess of that produced by digitalis, although never with the same degree of clinical improvement nor with reduction of the ventricular rate. These results direct attention to the need of providing an adequate supply of vitamin C for all patients with cardiac failure. To ensure a constant state of vitamin C saturation in heart failure it is probably enough to include in the patient's diminished fluid intake an adequate proportion of lemon and orange juice.

Erythrocyte Sedimentation and Plasma Fibrinogen.—The discovery by Macfarlane of a boy whose blood contained no fibrinogen offered Oakley the opportunity of studying the relationship between this substance and erythrocyte sedimentation. The complete absence of fibrinogen in the blood investigated by Macfarlane made it possible to prepare with a minimum of manipulation samples of blood of known but varying fibrinogen content and to compare their sedimentation rates. A subject was chosen whose blood sedimentated with moderate rapidity, and the fibrinogen content of his plasma was estimated by the colorimetric method. Of this blood 8 cc. was drawn into a syringe containing 2 cc. of 3.8 per cent sodium citrate solution. A similar quantity of blood and sodium citrate was obtained by the same technic from the boy and the two samples were rapidly mixed in a series of known proportions. Unmixed samples of both bloods and those containing known but varying quantities of each blood were put up in Westergren sedimentation tubes, and readings were taken at the end of one and two hours. The blood that contained no fibrinogen gave almost negligible sedimentation rates at both one and two hours and the rates of the mixed samples rose progressively with the fibrinogen content to a maximum of 78 (one hour) and 107 (two hours) in the unmixed blood of the chosen patient. The results may be reasonably interpreted as confirming the views that fibrinogen plays a large, and probably the largest, part in determining the sedimentation rate of human blood.

South African Medical Journal, Cape Town

12: 41-70 (Jan. 22) 1938

Sex Hormones in Treatment of Certain Gynecologic and Related Conditions. B. G. Shapiro.—p. 41.
New Concepts of Filtrable Viruses. W. Stone.—p. 45.
Moniliasis. Phyllis A. Don.—p. 49.
Bacterial Encephalitis from the Genus Listerella: A New Disease of Man and Animals. J. H. H. Pirie.—p. 51.
Cause and Treatment of Bilharzia Disease. F. G. Cawston.—p. 51.
The Dog Tick Haemaphysalis Leachi as a Vector of Tick Typhus. J. H. S. Gear and M. Douthwaite.—p. 53.
Calf's Meat as Cause of Paratyphoid in Natives. M. W. Henning.—p. 55.
*Typhus Fever Contracted in Laboratory from Virus Isolated from Rats: Case. J. H. S. Gear and L. H. Becker.—p. 57.
Pathogenesis of Tuberculosis, Especially in Dark Races. M. Straub.—p. 61.
Some Carcinogenic Substances. L. P. Bosman.—p. 66.
Fowl Sarcomas and the Tumor Problem. M. des Ligneris.—p. 67.

Typhus from Virus Isolated from Rats.—Gear and Becker discuss a case of typhus fever in a laboratory caused by a virus isolated from the brains of wild rats in which it was possible to make detailed laboratory and clinical investigations throughout the illness. The presence of a local lesion and associated regional lymphadenitis is noteworthy. Their presence may have been caused by the fact that the virus was introduced subcutaneously and not directly into the blood stream, as would possibly happen if introduced by a blood-sucking parasite. The incubation period, like that of tick-bite fever, was exactly one week. The duration of the fever was sixteen days. The illness, too, was much more severe than is usual in cases of tick-bite fever affecting young adults, the subsequent asthenia being more pronounced and the convalescence less rapid. The temperature was of the continuous type falling by crisis. The leukopenia in the early stages and the absence of leukocytosis at any stage of illness are of diagnostic interest. It would seem that reliance on the leukocyte count in distinguishing the two conditions is not justified. An increase in the percentage of polymorphonuclear leukocytes was observed. A consideration of the leukocyte count does not help to distinguish this disease from influenza and typhoid, the two conditions usually confounded in their earlier stages with typhus. The development of agglutinins to Proteus OX 19 during the febrile period was in contrast to tick typhus, in which agglutinins are usually detectable only after defervescence. Agglutinins for Proteus OX 2 and Proteus OXK were absent. It appears that no one laboratory test is capable of distinguishing between the two diseases. The diagnosis depends more on clinical observations.

Journal of Oriental Medicine, Mukden, Manchoukuo

28: 1-22 (Jan.) 1938. Partial Index

Experimental Study of Influence of Nose Obstruction on the Lungs. I. Hayakawa.—p. 1.
Studies on Serum Precipitation Reaction: Parts I and II. M. Hamano.—p. 3.
Initial Increase of Frequency of Radial Pulse During Muscular Work. S. Ito and Y. Watanabe.—p. 5.
So-Called Mixed Tumor of the Salivary Glands: Three Rare Cases. T. Sakima.—p. 13.
Experimental Study of Influences of Cervicothoracic Sympathicoganglionectomy and Cervical Vagotomy on Protective Function of Cells in the Lungs of Rabbits Against Acute Pathogenic Bacteria: Report III. T. Nakazima.—p. 14.
Endemic Dermatitis in Manchoukuo. M. Murayama.—p. 17.
Influence of Water and Alcohol Soluble Parts and of Ethereal Oil of Allium Scorodoprasum on Potassium Content of Blood Serum. T. Miyamoto.—p. 18.
Influence of Water and Alcohol Soluble Parts and of Ethereal Oil of Allium Scorodoprasum on Water Content of the Blood. T. Miyamoto.—p. 19.
Experiments on Action of Vitamin C on Anaphylaxis of Guinea Pigs. M. Hasimoto, S. Kitamura and S. Suzuki.—p. 20.

Annales de Médecine, Paris

43: 165-252 (March) 1938

Researches on Pathogenesis of Rickets. G. Mouriquand, A. Leulier and A. Coeur.—p. 165.
*Acute Intoxication by Ingestion of Aniline. J. Cathala, R. Hazard, H. Maschas and R. Jequier.—p. 187.
Acute Saturnine Nephritis. M.-P. Weil and V. Oumansky.—p. 195.
Role of Liver in Modifications of Proteins in Suppurations. I. Blitstein.—p. 211.
Polyneuritis in Malarial Patients. H. Rogers and J. Boudouresques.—p. 235.

Acute Intoxication from Ingestion of Aniline.—Cathala and his associates report the case of a child, aged 18 months, in whom an acute intoxication resulted from the ingestion of a tincture with an aniline base. This case induced the authors to make experiments on rabbits. They studied the action of aniline on the alkali reserve, the blood chloride and sugar and the respiration. The authors reach the following conclusions: 1. Acute intoxication by aniline, in addition to the methemoglobinizing effects, produces profound changes in the acid-base equilibrium and the glycemic regulation. 2. The acute intoxication by aniline influences the nervous system and determines grave disturbances, such as asthenia, polypnea, somnolence and collapse. 3. It is interesting to note that in the young child a definite intoxication provokes symptoms which do not fundamentally differ from those which characterize the choleriform toxic syndrome.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

54: 377-412 (March 14) 1938. Partial Index

*First Results of Study of Chemistry of Medullary Juice Obtained by Sternal Puncture: Glycomyelia. R. Benda, F. Franchel, J. Ducatel and J. Nicolas.—p. 378.
Studies on Medullary Iron. R. Benda, G. Poirot and F. Franchel.—p. 386.
Chronic Hypertensive Nephritis in Child Simulating a Cerebral Tumor: Study of Renal Insufficiency. R. Debré, J. Marie, R. Dumas and Malinsky—p. 390.
Cryptogenic Aplastic Myelosis with Slow Progress. P. Émile-Weil, P. Isch-Wall and S. Perlès.—p. 398.
Study of Complex Pulmonary Lesions by Tomography. P. Ameuille, G. Ronneaux and J.-M. Lemoine.—p. 401.

Chemistry of Material Obtained by Sternal Puncture.—Benda and his associates report studies on the sugar content of the blood and of the marrow obtained by sternal puncture. In studies on twenty-five subjects they found that the glycomyelia is equal to or slightly less than the glycemia. In hyperglycemic states without glycosuria, the glycomyelia is extremely variable in comparison with the glycemia. This observation was made on nine patients. In diabetes, glycomyelia has a decided tendency to be higher than glycemia; this can be demonstrated only at times, namely if, taking into account the absence of chemical homogeneity in the medullary juice, the sugar content is determined in several successive specimens. The investigations on diabetes were made in five cases. The authors suggest that the study of glycomyelia be applied as a routine measure for the study of sugar metabolism (tests for insulin, epinephrine, phlorhizin and alimentary glycosuria).

Presse Médicale, Paris

46: 433-448 (March 19) 1938

Juxtacardiac Region of Stomach in Gastroscopy. F. Moutier and C. Debray.—p. 433.
Stenosis of Aortic Valve and Auriculoventricular Dissociation. R. Lutembacher.—p. 436.
Study of Mechanism of Spontaneous Obliteration of Tuberculous Caverns. R. Poinso and Y. Poursines.—p. 439.
Metastatic Cancers: Lag of Roentgenologic Signs and Their Rapidity of Appearance. J.-A. Chavany and F. Thiébaut.—p. 442.
*New Roentgenologic Technic to Visualize the Small Intestine. B. Ghélew and O. Mengis.—p. 444.
Diverticula of Duodenojejunal Angle. C. Proux and N. D. Hoang.—p. 446.

Roentgenologic Visualization of Small Intestine.—Ghélew and Mengis say that the methods hitherto employed in the roentgenologic visualization of the small intestine have failed to give satisfactory results. Their aim was to avoid these difficulties. To avoid the pylorus, they injected the opaque substance directly into the small intestine in a continuous stream. The examination is made on fasting patients who the evening before have been given a laxative (castor oil or epsom salt). If this purge has been without effect, an enema is given before the examination. It is important that the large intestine is empty. A duodenal tube with an exterior diameter of 5 mm. (interior 3 mm.) is introduced. The entrance of air into this tube or sound is avoided by closing the external end by means of a forceps. Once the sound has reached the duodenum under roentgenologic control, 30 Gm. of warm castor oil is injected and is eliminated completely from the tube by 30 cc. of warm water, introduced immediately after. The patient rests for from forty-five to sixty minutes. Then a tube is connected with the duodenal sound. This tube is in communication with a container which is 1.5 meters above the patient's mouth and which holds 150 cc. of thorium oxide and from 100 to 120 cc. of warm water. The patient is placed behind the fluoroscopic screen; the forceps is removed and the fluid flows in. If the patient feels distress he should breathe slowly and deeply, so as not to expel the sound. Usually after five or six minutes the opaque substance can be seen advancing rapidly in the small intestine. If the image appears clear, a film may be taken. After ten or fifteen minutes a second roentgenogram is made. At this time the liquid should have reached the ileum; often it is arrested for a time in the terminal portion of the ileum, before it goes into the cecum. The fluid may be introduced while the patient is standing or reclining. The authors prefer the first position and have the patient assume the recumbent posture when the exposure is made. At this moment the patient is told to hold his breath and to retract the abdomen. If the patient is not fatigued, a little air may be introduced into the duodenal sound. This reaches the small intestine rapidly and allows a better outline.

Monatsschrift für Psychiatrie und Neurologie, Basel

97: 321-384 (Jan.) 1938

*Clinical and Therapeutic Experiences in Cases of Dementia Paralytica at the Innsbruck Clinic, 1922 to 1932. F. Schmuttermayer.—p. 321.
*Hypochondriasis and Epilepsy. R. Hirsch.—p. 367.
Cerebrolytic Capacity of Cerebrospinal Fluid. P. Büchler.—p. 375.

Dementia Paralytica.—Schmuttermayer reports clinical and therapeutic experiences in 295 cases of dementia paralytica at the Psychiatric-Neurologic Clinic of Innsbruck. About 70 per cent were men and 30 per cent women. The predominance of dementia paralytica in males cannot be entirely explained as a result of a higher incidence of syphilis in men, for statistics have revealed that, whereas the incidence of syphilis was only 20 per cent higher in men, that of paralysis was 130 or even 143 per cent higher. However, several other factors have to be considered in connection with the sex incidence of dementia paralytica. The author stresses the rarity of the disease among farmers. Only 22.4 per cent of the cases had received specific treatment during the early stages of the disease and not one had been given treatments that were adequate according to present standards. Since in many cases it proved impossible to determine the time of infection, the periods of incubation can be estimated only approximately. More than 50 per cent of the patients had simple dementia; 8.5 per cent had the dull-euphoric form; 9.1 per cent had the expansive type; 3.4 per cent had a depressive type; 2.4 per cent a paranoid form. The author gives attention chiefly to malarial therapy, to which 263 of the patients were subjected. In evaluating the treatment, one should permit at least five years to elapse before making a final estimate. Treatment with recurrent fever was employed in a few cases and in these it was either preceded or followed by malarial therapy. Rat bite fever likewise was mostly employed as a secondary treatment. Its efficacy compared favorably with that of malarial therapy.

Hypochondriasis and Epilepsy.—Hirsch investigated whether relations exist between hypochondriasis and epilepsy. The prerequisites for the development of hypochondriasis are despondency, dependence on environmental conditions, selfishness, self criticism, vanity and cowardice. The author says that epileptic patients almost never exhibit hypochondriasis. The psychologic foundations of the two disorders are so different that the epileptic character excludes the development of a true hypochondriasis. Among 600 epileptic patients he did not find one who had a hypochondriac neurosis. He illustrates with case

histories that those who at times appeared hypochondriac did not have a hypochondriac neurosis in the true sense but were epileptic patients who exhibited hypochondriac signs only during depressive periods; the signs disappeared together with the depressions. He made all his studies on patients in institutions and suggests that those not in institutions and still socially adaptive might show different psychologic aspects.

Archivio per le Scienze Mediche, Turin

65: 201-422 (Feb.) 1938. Partial Index

*Eosinophilia From Ingestion of Liver. E. Massobrio and P. Maranzana.—p. 201.
Uric Acid in Blood in Metapneumothoracic Pleuritis. U. De Michelis.—p. 231.
Lactic Acid of Blood in Pulmonary Tuberculosis, Especially in Course of Artificial Pneumothorax. U. De Michelis and R. Giacchero.—p. 245.
*Modifications of Coagulation Time, Bleeding Time and Morphology of Blood After Roentgen Irradiations of Spleen and Hypophysis. M. Segre.—p. 255.
Aplastic Myelosis: Clinical and Anatomopathologic Study of Cases. E. Samek.—p. 331.

Eosinophilia from Ingestion of Liver.—Massobrio and Maranzana observed the eosinophils during liver treatment of twenty-five patients suffering from pernicious anemia and also in normal persons. The liver, almost raw or slightly boiled for thirty minutes, was administered with the diet in amounts of 250 Gm. a day. The authors conclude that increased eosinophilia is induced in all patients who are suffering from pernicious anemia, as well as in normal persons, from ingestion of raw liver and in 80 per cent of the cases by ingestion of almost raw liver. It is not induced by ingestion of boiled liver and by the parenteral administration of injectable extracts of liver. Eosinophilia from the administration of liver is not an index to show the favorable effects of the liver treatment. It increases from overstimulation of the parenchyma of the marrow bone by substances of the liver, followed by a reaction of increased production of hemohistioblasts. Eosinophilia from administration of raw liver develops from the allergic action of proteins which are contained in liver and enter the blood in large amounts. It develops by chemotaxis. Splenectomy which was done in the course of administration of liver in dogs failed to induce increased eosinophilia.

Modifications of Blood from Irradiations of Spleen and Hypophysis.—Segre gave rabbits roentgen irradiations to the spleen and to the hypophysis for fifteen minutes at a distance of 40 cm. from the skin, at doses of 100 roentgens with a current of 3 milliamperes and 150 kilowatts through a filter of 0.5 mm. of zinc and 2 mm. of aluminum. He found that the irradiations cause diminution of the coagulation time, the bleeding time and the number of platelets during the first six hours, after which they slowly return to normal. Within the sixth and twelfth hours moderate erythropenia takes place, which in the course of twenty days returns to normal or to slight erythrocytosis after splenic irradiations and to slight erythrocytosis after hypophysial irradiations. Irradiations to the spleen are followed during the first few hours by oscillations of the number of leukocytes, which are followed by leukocytosis and relative or absolute pseudohemophilia followed by relative or absolute lymphocytosis. The leukocytic formula remains normal in the largest number of cases after irradiations to the hypophysis. Irradiations to the spleen or to the hypophysis induce slight monocytosis. By the thirtieth day the morphology of the blood and the number of erythrocytes are normal. Erythroblasts may be present in the blood of some animals in the course of the treatment. Slightly increased poikilocytosis and polychromatophilia appear frequently after hypophysial irradiation.

Minerva Medica, Turin

1: 169-196 (Feb. 17) 1938

*Influence of Exogenous Superinfection in Pathogenesis of Pulmonary Tuberculosis in Adults. E. Filla.—p. 177.
*Variations of Sodium Chloride in Blood After Surgical Interventions. F. De Lorenzo.—p. 182.

Exogenous Pulmonary Tuberculosis in Adults.—Filla states that exogenous superinfection is a frequent cause of pulmonary tuberculosis in adults ranging in age from 15 to 25 years and rare after that. The disease shows typical early tuberculous infiltration of Assmann's type. When the bacilli are virulent or the patients are in a state of receptivity, bronchopneumonic lesions which follow a serious evolution develop. Tubercle bacilli of exogenous or endogenous origin may remain for a long time in the body of a person with good immunebiologic resistance, without causing tuberculosis, or causing only transient nontuberculous symptoms. The behavior of the large number of tubercle bacilli that enter the body from superinfection depends on the receptivity of the patient when superinfection takes place and for a long time after that, as the latent disease may develop as soon as infection becomes stronger than immunity. The dynamic energy of tuberculous infection or superinfection plays the most important part in the development of tuberculosis in children. For the development of the disease in adults, the individual factor plays the most important part.

Sodium Chloride in Blood After Surgical Intervention.—De Lorenzo found that after surgical intervention the amount of sodium chloride in the plasma and in the total blood diminishes in all cases, whereas it increases in the erythrocytes. The diminution is proportional to the gravity of the condition, the severity of the operation and the development of postoperative complications. It is unrelated to the type of anesthesia used and is caused by disturbance of the acid-base equilibrium with consequent acidosis. Injections of hypertonic solution of sodium chloride reestablish the acid-base equilibrium.

Archivos Argentinos de Pediatría, Buenos Aires

9: 3-98 (Jan.) 1938

Semeiologic Schema of Neuropsychic Parallelism in Children. A. Gareiso and F. Escardó.—p. 3.
Muscular Hypertonus of Nutritional Origin in Infants. J. P. Garrahan.—p. 7.
*Placental Extract in Prevention of Measles. F. Bazán and E. Sujoy.—p. 12.
Congenital and Acquired Heart Disease: Retrospective Diagnosis. M. Acuña and A. Puglisi.—p. 21.
Osgood-Schlatter's Disease with Double Localization: Case. E. A. Beretervide and J. J. Reboiras.—p. 26.
Congenital Microcolon. J. R. Abdala, O. A. Itoiz, J. C. Pellerano and S. Schere.—p. 33.
Treatment of Juvenile Obesity. S. Schere.—p. 42.

Prevention of Measles.—Bazán and Sujoy administered intramuscular injections of placental extract to 125 children. Satisfactory results were obtained in sixty-four of seventy-nine cases in which the treatment was administered for prevention of measles. The latter was greatly modified in fourteen of fifteen cases in which contagion occurred after administration of the injection. The treatment was given in the course of the disease in forty-six cases and the evolution of the disease was favorably modified in forty-three. The earlier the injections in relation to exposure to contagion and in the course of the disease, the better the results obtained. The latter is harmless and does not induce reactions.

Bol. Inst. de Med. Exper. p. Cáncer, Buenos Aires

14: 257-588 (Sept.) 1937. Partial Index

Regression and Reabsorption of Malignant Tumors by Hydrolysates of Striped Muscles. A. H. Roffo.—p. 257.
Action of Proximal Roentgen Treatment on Malignity of Cancerous Cell Cultured "in Vitro." A. E. Roffo, Jr.—p. 277.
Action of Short Waves on Basal Metabolism. A. E. Roffo, Jr.—p. 479.
*Biologic Reaction for Gastric Cancer. R. Redi and V. Contini.—p. 495.

Biologic Test for Gastric Cancer.—Redi and Contini's test consists in the injection into an inguinal lymph node of 1 cc. of an extract prepared from cancerous gastric tissue, with removal of the lymph node thirteen or eighteen days later for microscopic examination. The authors found that in patients suffering from cancer of the stomach the injections of a substance from extracts of normal stomach do not induce changes in the lymph node, whereas the injected cancerous extract induces macroscopic and microscopic changes. In all cases the size of the lymph node is increased and there is tumoral infiltration of the node. The intranodular injection of either substance induces no reaction in normal persons. The authors believe that the test is specific for gastric cancer, which probably sensitizes the lymph nodes.

Archiv für Kreislaufforschung, Dresden

2: 1-156 (Dec.) 1937. Partial Index

Vector Diagraphy as Practical Clinical Method; Normal Vector Diagram. F. Schellong, E. Schwingel and G. Hermann.—p. 1.

Significance of Ligamentum Arteriosum of Botallo's Duct and Its Insertion in Wall of Pulmonary Artery as Depressor Nerve in Various Animal Species. M. Takin and S. Watanabe.—p. 18.

Physical Chemistry and Peripheral Circulation. K. Hasebroek.—p. 28.

Symptoms of Alternation in Ventricular Complex of Human Electrocardiogram. K. Spang and C. Korth.—p. 47.

*Studies on Heart in Hypoglycemic Shock, with Particular Reference to Electrocardiographic Observations in Insulin Therapy of Schizophrenia: Electrocardiogram During Metrazol Shock Therapy of Schizophrenia. W. Hadorn.—p. 70.

Electrocardiogram in Insulin and Metrazol Shock.—Hadorn reports investigations which indicate that insulin hypoglycemia signifies a cardiac impairment. To what extent the cardiac damage is caused by insulin and to what extent by hypoglycemia has not been determined. Changes in the T wave of the electrocardiogram are generally ascribed to insulin, but, since these are reversible, many authors do not regard them as a manifestation of myocardial impairment. He found that tachycardia and increased blood pressure often result from the insulin therapy of schizophrenia. They are elicited by the hypoglycemia and the reactive excretion of comparatively large amounts of epinephrine, but they usually disappear within a few hours. After mentioning the electrocardiographic changes in insulin hypoglycemia, the author says it cannot be denied that these changes signify either a cardiac lesion or a temporary impairment of the function. This implies that hypoglycemia should be avoided in cardiac impairment and that great caution is necessary in the administration of large doses of insulin. He made electrocardiographic studies also in metrazol shock. He found that metrazol shock therapy does not cause the same electrocardiographic changes as does the insulin shock; nevertheless it does cause changes, particularly in the auricular activity. The electrocardiograms that are made after metrazol shock reveal chiefly sinus tachycardias and a tendency to extrasystoles and auricular fibrillation. Changes in the S-T section and in the T wave, which characterize insulin shock, are absent. The auricular fibrillation that results from metrazol treatment usually yields to quinidine. In insulin shock therapy and also in metrazol shock therapy it is not yet possible to render a definite estimate about the possibility of a permanent cardiac and vascular impairment.

Klinische Wochenschrift, Berlin

17: 257-288 (Feb. 19) 1938. Partial Index

Tonus of Sympathetic Centers. W. Fasshauer.—p. 260.

Clinical Aspects and Pathology of Myasthenia Gravis. K. Nowotny and F. K. Redlich.—p. 262.

Vitamin C and Number of Leukocytes. H. Schnetz.—p. 267.

*Hypovitaminosis and Osteomyelitis. W. Wachsmuth and G. Heinrich.—p. 269.

Bacterium Pneumosintes as Cause of Posttraumatic Meningitis. H. Heubach.—p. 271.

Etiology of Agranulocytosis. C. Bresgen.—p. 273.

Hypovitaminosis and Osteomyelitis.—Wachsmuth and Heinrich cite Takahashi's experiments on the pathogenesis of hematogenic infectious osteomyelitis. Takahashi demonstrated that the resistance toward bacterial infections is reduced when there is a deficiency of vitamins A, B and C. Metastases occurred in the long bones especially in C avitaminosis. Metastases in the bone marrow developed after intravenous administration of suspensions of staphylococci in 100 per cent of the avitaminotic animals but in only 44.4 per cent of the controls. The lack of vitamins, particularly of vitamin C, produces a locus minoris resistentiae at the end of the long bones, so that they are especially subject to infection. This is understandable in view of the changes in the medullary structure observable in avitaminosis. Takahashi's experimental observations were corroborated by a clinical case observed by the authors. A man aged 24 acquired a streptococcic osteomyelitis following scarlet fever. Four months later the patient complained of pain in the arm and still later of pain in the right leg. Roentgenoscopy disclosed sequestration in both arms and legs. Besides a slight swelling there were no other clinical signs at the four sites of the osteomyelitic process. The sequestrums were removed and examination of the pus yielded hemolytic streptococci. Noteworthy is the symmetric involvement of both radiuses and both tibias. The authors say that in view of a starvation diet, which the patient had undergone for five weeks, a hypovitaminosis was present. Experimental and clinical observations indicate that disturbances in the vitamin metabolism may make the bone marrow more susceptible to infections. It may be concluded that hematogenic osteomyelitis is dependent on factors that hitherto were disregarded. When these factors are considered, surgical treatment alone is not sufficient. A suitable diet during infectious diseases may be a valuable aid in preventing metastases in the bone marrow.

Münchener medizinische Wochenschrift, Munich

85: 161-200 (Feb. 4) 1938. Partial Index

Pathogenesis of Diabetes Mellitus. F. Hoff.—p. 161.

*Diagnosis of Dental Infection by Short Wave Provocation. K. Gutzeit.—p. 164.

Preventing Allergy to Insulin. H. Malten.—p. 166.

Differential Diagnosis of Poliomyeltis. H. G. Huber.—p. 167.

Injurious Effects of Iodine from Use of Toothpastes Which Contain Iodine. E. Müller-Stade.—p. 173.

*Should Pulmonary Abscesses Be Treated by Pneumothorax? K. Kollmeier.—p. 179.

Diagnosis of Dental Infection by Short Wave Provocation.—Gutzeit directs attention to an earlier description of this method published in the *Münchener medizinische Wochenschrift* (**84:**961 [June 18] 1937; abstr. THE JOURNAL Aug. 14, 1937, p. 543) and then describes further experiences which again revealed the following factors: 1. Short wave irradiation of healthy teeth with living dental pulps does not cause a general reaction that becomes manifest in an acceleration of the sedimentation speed of the erythrocytes. 2. Some of the teeth that have granulomas or the pulp of which is dead or diseased show, after short wave irradiation, a noticeable general reaction which is indicated by an acceleration of the sedimentation speed. 3. However, in some of the teeth, which roentgenoscopy has revealed as diseased, short wave irradiation does not result in an acceleration of the sedimentation speed. These observations indicate that, whereas the irradiation of healthy teeth produces no general reaction, there are some diseased teeth which do produce a reaction and other diseased teeth which do not. The author concludes that those diseased teeth which as the result of short wave irradiation cause an acceleration of the sedimentation speed exert an unfavorable effect on the organism. In case of a negative outcome of the short wave provocation of diseased teeth, two possibilities must be considered: either the tooth under observation contains no toxic substances and has no connection with the lymph and blood vessels of the general organism, or the method of short wave irradiation may have been faulty. The author deplores that such methodical errors cannot be entirely avoided with the present equipment. Discussing the value of the short wave provocation, he says that extraction of the teeth which gave a positive reaction did not always produce improvement in the general condition; if the lymph nodes have already become infected, or if new foci have already developed in other parts of the organism, the removal of the primary focus would not counteract these secondary foci. Nevertheless, if it is used with care and if methodical errors can be avoided, it is a valuable diagnostic aid.

Pneumothorax in Pulmonary Abscess.—After citing various treatments suggested for pulmonary abscess, Kollmeier says that pneumothorax therapy is advised by few, owing to the fact that the dangers of this method are frequently stressed. It is pointed out that pneumothorax therapy in pulmonary abscess readily leads to an involvement of the pleura and to empyema. Pneumothorax therapy of pulmonary abscess was used as early as 1833, long before pneumothorax was introduced into the treatment of pulmonary tuberculosis. The author resorted to pneumothorax therapy in seven of ten cases of pulmonary abscess that came under his observation. In all except one of the cases the abscess was either in a central location or near the hilus. He thinks that this localization of the abscesses was chiefly responsible for the especially favorable action of the pneumothorax therapy. Involvement of the pleura was observed in none of the cases. After the pneumothorax was induced there always was an improvement in the general condition and in some cases the cough and expectoration disappeared. Moreover, the fever usually decreased and the appetite improved. Only small quantities of air should be introduced. The pressure should remain negative; at any rate, no great pressure should be exerted on the lung. Refilling should be

continued until the fever has subsided and cough and expectoration have disappeared. Pneumothorax is indicated in abscesses with a central or juxtahilar location, but in juxtapleural abscesses it should be used with the greatest caution or not at all.

Zentralblatt für Gynäkologie, Leipzig

62: 449-512 (Feb. 26) 1938. Partial Index

Significance of Highest Number of Uterine Contractions in Premature Rupture of Bag of Waters but in Normal Width of Pelvis. A. Wiessmann.—p. 450.

Intra-Abdominal Radium Irradiation in Cervical Carcinoma. F. Daels.—p. 453.

Roentgen Rays in Determination of Maturity of Intra-Uterine Fetus. H-W. Kleist.—p. 468.

*Diagnosis of Pregnancy by Means of Infusoria According to Kustallow. H. von Wattenwyl.—p. 477.

Value of Kustallow's Pregnancy Reaction by Means of Infusoria. Olive Hinck.—p. 478.

Practical Value of Pregnancy Reaction of B. Friedrich (Modification of Visscher-Bowman Reaction). M. Rodecurt.—p. 479.

Diagnosis of Pregnancy by Means of Infusoria.—Von Wattenwyl investigated the reliability of the pregnancy reaction by means of infusoria described by Kustallow (*Zentralbl. f. Gynäk.* **61**:269 [Jan. 30] 1937; abstr. THE JOURNAL, April 10, 1937, p. 1307) and concluded that it was unreliable.

Novyy Khirurgicheskiy Arkhiv, Dnepropetrovsk

40: 1-224 (No. 157-158) 1938. Partial Index

*Anastomoses Between Bile Ducts and the Gastrointestinal Tract. T. M. Talman.—p. 3.

*The Motor Function of a Stomach After Resection. F. Vitkin.—p. 50.

Migrating Thrombophlebitis and its Treatment. G. E. Ostroverkhov.—p. 76.

The Microflora in Odontograms of Osteomyelitis of the Jaws. S. Z. Gutkin.—p. 88.

The Mechanism of Action of Hetero Blood Transfusion. B. G. Veksner.—p. 96.

Gastric Resection and Hemopoiesis. B. A. Petrov.—p. 104.

Anastomoses Between Bile Ducts and Gastrointestinal Tract.—Talman reports a study of sixty-five cases of anastomosis between the bile ducts and the gastrointestinal tract performed at the Feodorov Surgical Clinic of the Military Medical Academy, Leningrad, between 1905 and 1935. The operation was performed in twenty-five cases because of a malignant tumor, while in thirty-nine the condition was benign. There were seventeen cholecystogastrostomies, fifteen cholecystoduodenostomies, eight cholecystojejunostomies, two choledochogastrostomies, twenty-one choledochoduodenostomies and two hepatocholangioenterostomies. He believes that cholecystogastrostomy for the treatment of gastric ulcer has not justified itself. It is apparent from several clinical studies that reduction of the gastric acidity is not accomplished either because the amount of bile necessary for the reduction is not adequate or because of the stimulating effect of bile on the gastric juice secretion. Other objections are the chronic infection of the gallbladder which invariably takes place and the regurgitation of the gastric contents into the bladder and in some cases into the bile tracts. The advantages of choledochoduodenostomy are offset by the fault that it permits the entrance of the gastric and duodenal contents into the intrahepatic bile channels. His studies established that this occurred in sixteen of twenty-five cases studied. The follow-up study further demonstrated that in many cases this condition does not lead to an acute infection of the biliary tracts, while in others it gives rise to attacks of cholangitis with colic, chills, fever, jaundice and, in a few cases, liver abscess. Many of these patients have chronic cholangitis, which however does not give rise to severe flare-ups and to significant symptoms. The author concludes that formation of anastomosis between the bile ducts and the gastrointestinal tract represents a crude mechanical interference with the complicated biliary system and its many functions. It is indicated only in cases of obstructive jaundice caused primarily by a malignant neoplasm and in certain benign lesions capable of producing grave disease states.

Motor Function of Stomach After Resection.—Vitkin presents a study of seventy-four patients in whom partial gastric resection was performed. The type of operation was the second method of Billroth in sixty-seven and the Polya-Reichel modification in seven. There were ten subtotal resections. Each patient was examined before the operation as to the gastric secretion, the presence of occult blood in the feces, the blood picture, the roentgenoscopic appearance of the stomach with particular attention to its motor function, the size of the stomach, its motility, tonus and peristalsis, the emptying and the relief of the gastric mucosa. Similar observations were made after the operation at periods varying from two weeks to six years. Thirty-eight patients were examined from two to five times after the operation. Altogether there were 132 roentgenologic examinations on a stomach after resection. The author found that the stomach empties rhythmically after the second Billroth operation or after one of its modifications. He believes that it is not necessary to resort to complicated methods (Finsterer or Goetze) to accomplish the rhythmic emptying. The rhythmicity of emptying apparently does not depend on the extent of stomach removed, as it was in evidence after a subtotal resection. There are no data which speak in favor of formation of a sphincter in the region of the anastomosis. He feels that it is entirely unlikely after a resection according to the second method of Billroth. The periodic closure and opening of the anastomotic stoma is due to the peristaltic contractions and dilatations of the nearest loop of the efferent limb of the bowel. Spasm of the anastomotic stoma after resection for a malignant condition is an early sign of a local recurrence. The majority of the patients have a hyperplastic gastritis which as a rule does not give rise to subjective sensations. The rhythmic emptying of the stomach after resection according to the second method of Billroth or its modification is paralleled by the excellent state of the health of the patients.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

82: 825-968 (Feb. 19) 1938. Partial Index

Significance of Blood Serum and Lymph in Action of Digitoxin and Dyestuffs on Heart of Frogs. R. A. Hoekstra and P. Brugman.—p. 840.

New View of Epilepsy. D. M. Van Londen.—p. 846.

Method of Staining Erythrocytes in Urinary Sediment. A. W. Endtz.—p. 856.

Glycosuria After Insulin Coma. S. Lups.—p. 858.

*Liver Therapy in Hypochromic Anemia. J. J. De Jong.—p. 863.

*Polyneuritis of Pregnancy and Korsakoff's Psychosis. P. A. Van der Hoeven.—p. 873.

Liver Therapy in Hypochromic Anemia.—De Jong emphasizes that liver therapy remains the treatment for hyperchromic anemia; that is, for those anemias in which the color index is above 1. He deplores the fact that it is often indiscriminately used in other forms of anemia and points out that Castle and Minot warned against this by emphasizing that the time to establish the exact diagnosis in anemia is before treatment is begun, not after the blood picture has been obscured by indiscriminate medication. He shows that in hypochromic anemia medication with iron and not with liver is advisable. In cases in which iron therapy does not counteract the hypochromic anemia, the factor responsible for this failure should be investigated. If carcinoma, bleeding ulcer and polyps of the intestinal tract, or conditions like hypothyroidism, tuberculosis and chronic nephritis can be excluded, and still the response to iron is not adequate, liver may be tried in addition to the iron; but such cases are comparatively rare.

Polyneuritis of Pregnancy and Korsakoff's Psychosis.—Van der Hoeven describes the history of a woman, aged 30, who for years had exophthalmic goiter. In June 1936 she became pregnant and emesis set in, which soon assumed the character of hyperemesis. The patient was hospitalized and her condition improved so she was able to take food. However, psychic disturbances set in and later the hyperemesis recurred. In view of her poor condition it was decided to interrupt the pregnancy. At first there was improvement, but the psychic disorder became more severe and the typical signs of Korsakoff's psychosis appeared. Moreover, the patient complained of severe pains in her arms and legs accompanied by formication and severe sweating. Examination revealed reduced strength of the muscles and abolishment of the tendon reflexes. A diet with high vitamin content produced some improvement, but because of persisting paretic conditions, hypesthesia and other disorders, medication with a vitamin B preparation was begun. Under the influence of this treatment the disturbances gradually subsided. This clinical picture, he believes, results from a deficiency in vitamin B. Further, the induced abortion is a factor in the development of the picture. He suggests that B avitaminosis might play a part in the development of hyperemesis gravidarum.